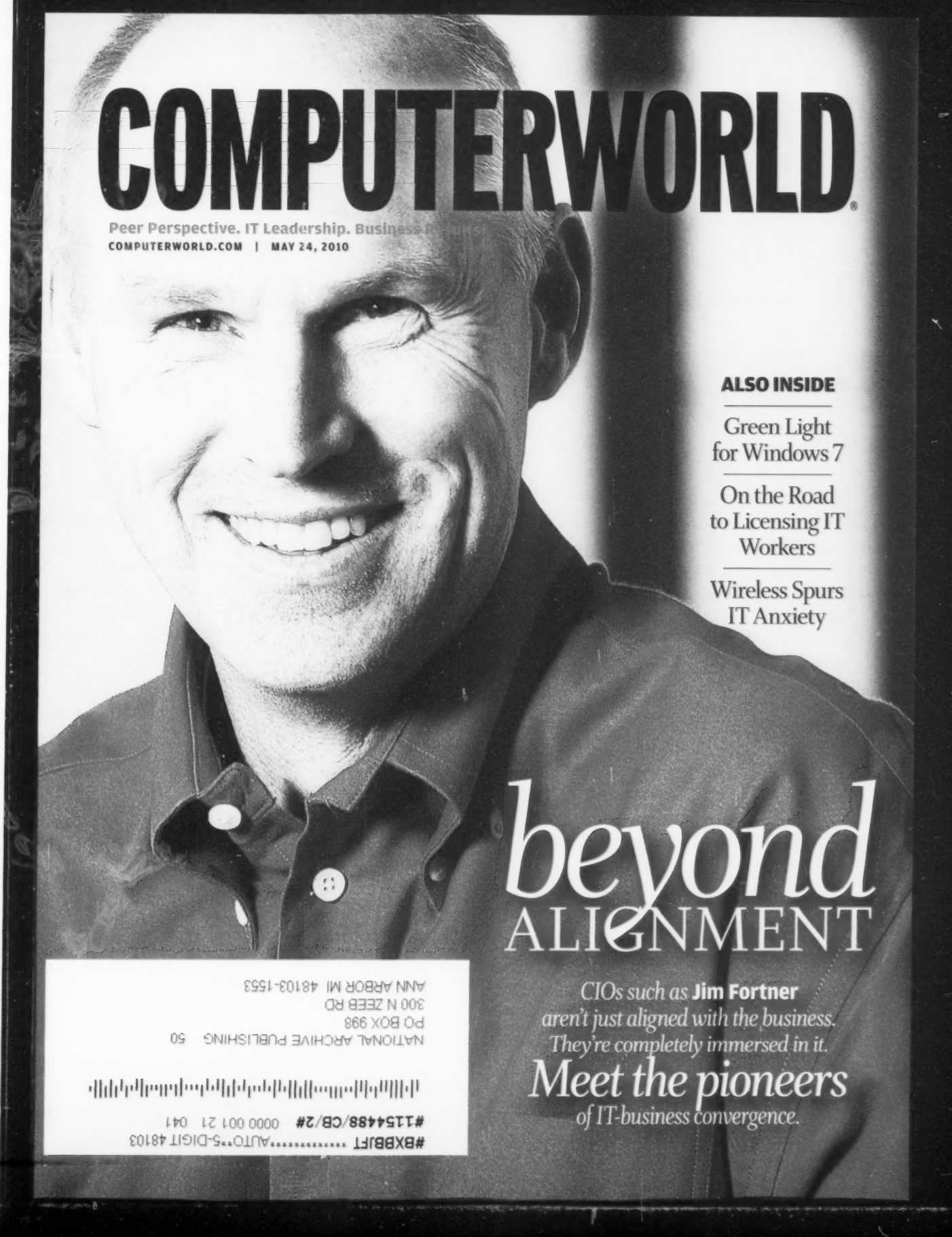
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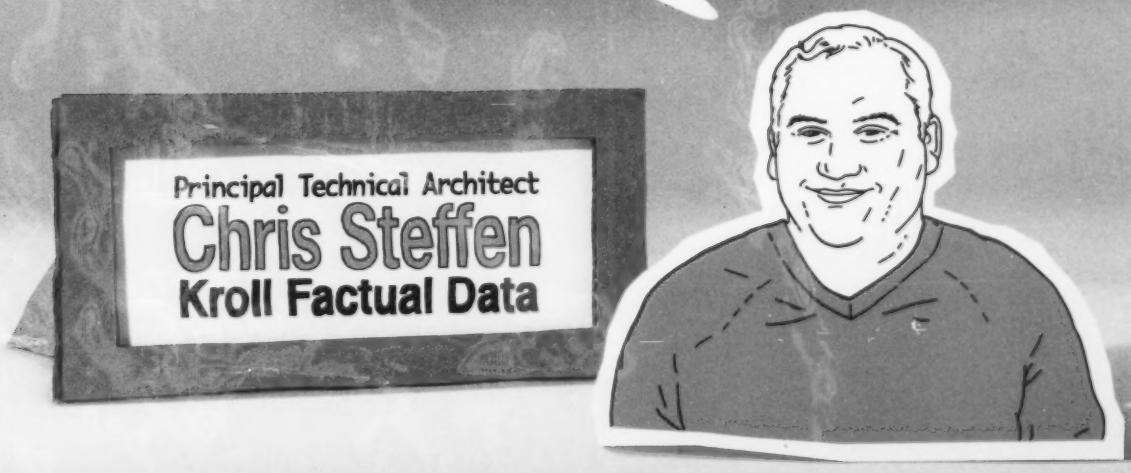

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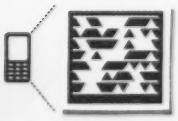

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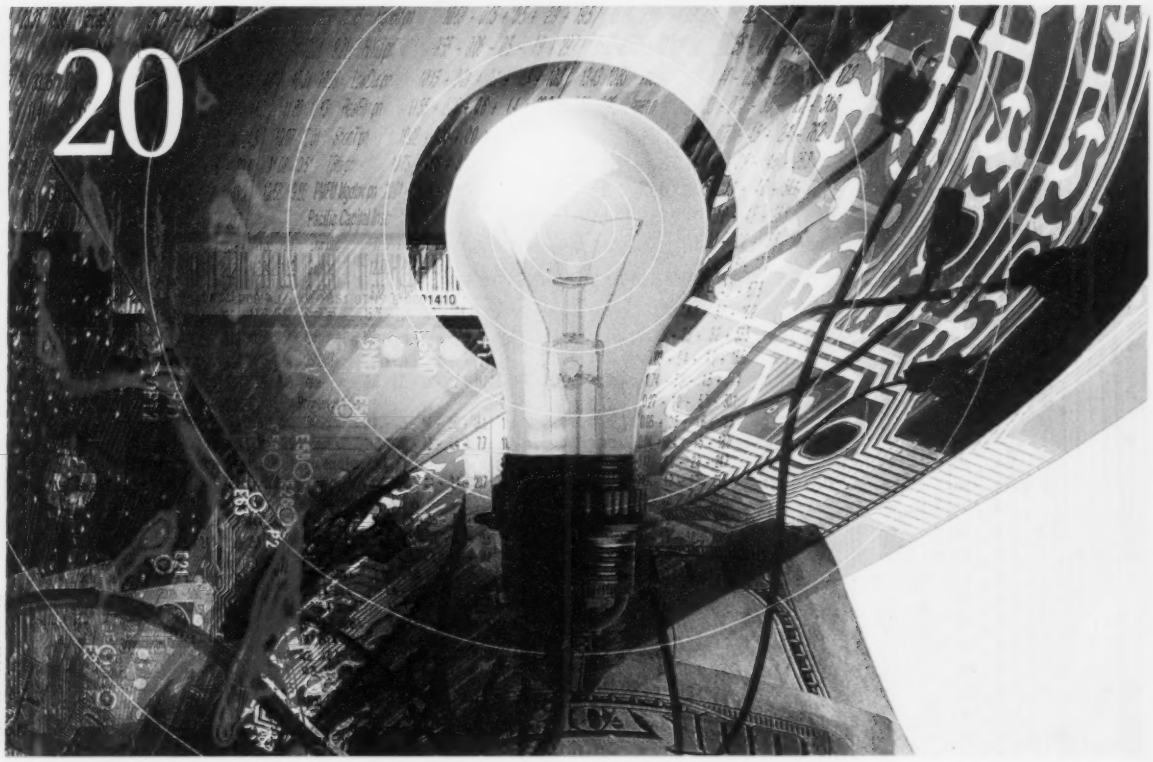

VIKTOR KOEN ILLUSTRATION

> **I'm in the insurance business. Technology is just part of the rhythm.**
>
> RAY VOELKER, IN "BEYOND ALIGNMENT," PAGE 20

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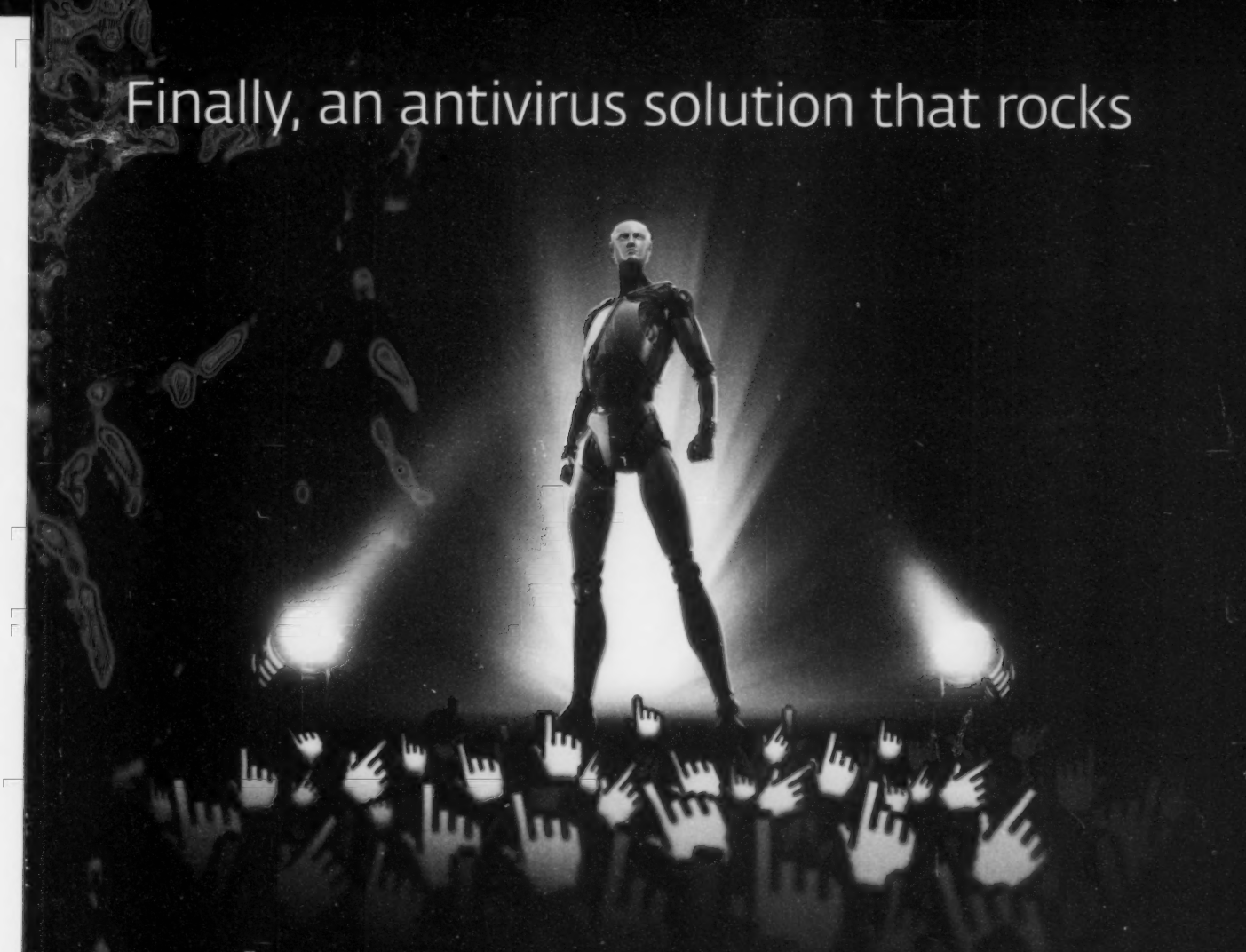
Finally, an antivirus solution that rocks



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Welcome to Our Fresh New Look

WHEN YOUR issue of *Computerworld* landed on your desk this week, you probably noticed that it looks different — still recognizably *Computerworld*, but somehow fresher and more up to date.

When our designers and editors kicked off this redesign, that's the reaction we were shooting for.

You'll find design improvements on every page, starting with the cover, which has more space for the artwork illustrating our cover story. If you're a Shark Tank fan (and who isn't?), you'll be happy to see that it has more space and a new look (see page 39). We've selected new typefaces throughout and updated the look and feel of our features, opinion columns and departments. As you page through, we hope you'll agree that the magazine has a cleaner look that's easier to read.

One aspect we did not change at all is the content. You'll find all the articles, columns and departments we've long delivered in virtually the same places they were before.

Why the changes? Our last redesign debuted in July 2007, and it was time for an update. We continually invest in, and improve, *Computerworld*. We've been at this for more than 40 years, and our pursuit of magazine excellence is never-ending.

In many ways, this is a continuation of our 2007 design upgrade, when we converted from tabloid to magazine. And the redesign is a companion to changes we recently introduced on our Web site.

When you think of *Computerworld*, I hope you think of two things: the print magazine and its associated Web site. We use them in different ways. *Computerworld.com* is the heart of our IT news operation. *Computerworld* has always had a strong news identity, and that's very evident online. In print, we take time to engage in deeper research to craft stories about business technology with IT peer perspective, reflection, analysis and an emphasis on ROI. We believe we're using the two media to their best advantage.

The Web site's new design, with its topic centers and heavily revised navigation, was launched in April. Like the magazine, it now has a cleaner look. All of our content is easier to find and far easier to read. Even our site search tool has improved.

We'll keep working on making all aspects of *Computerworld* as good as they can be. Meanwhile, I welcome your input on the new *Computerworld* — in print, online or both. Please feel free to e-mail your feedback to me at sfinnie@computerworld.com. ◆

Scot Finnie is *Computerworld*'s editor in chief.

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THINK TANK

Report Envisions a Self-service Future

THE PAST TWO DECADES have seen rapid growth in self-service technologies like automated teller machines, online shopping and airport check-in kiosks. But that's "only the beginning," according to the Information Technology & Innovation Foundation, a nonpartisan think tank in Washington.

In a report issued last month, the ITIF said the next decade could see even more efficiencies and cost savings from self-service automation — if government policies are supportive. The report included the following recommendations to policymakers:

- Resist the pleas of traditional businesses to restrict self-service operations. In one example of a such a restriction, car dealers succeeded in getting all 50 states to pass laws making it illegal for carmakers to sell directly to consumers over the Internet.
- Deliver more government services online and via kiosks.
- Create a climate that's conducive to self-service operations by, for example, making broadband Internet access widely available and enacting legal reforms. One such reform was the legislation that gave digital copies of checks the same legal status as paper checks; it paved the way for ATMs that can process checks.
- Establish stronger safety nets for people who will lose their jobs as a result of self-service technologies.

Critics say self-service technology is cold and impersonal, but the ITIF said those concerns are outweighed by convenience, lower costs and other economic benefits.

– Mitch Betts

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RESEARCH RECAP

App Overload Hurts Flexibility, Adds Complexity

CIOs monitor a lot of metrics, but advisory firm The Hackett Group Inc. says there's one more to watch: the number of enterprise software applications per 1,000 end users.

The best-performing companies have an average of 20 applications per 1,000 users, whereas run-of-the-mill companies have an average of 39, according to Hackett's benchmarking database.

Why is that important? A high number signifies a complex technology environment. That means IT has trouble quickly responding to changing business needs because it has to support so many applications, some of which may be duplicative or unneeded, a Hackett report said.

"By contrast, a low number implies an efficient environment and strong alignment between IT and overall business objectives," the report said.

Companies with a lot of applications also tend to suffer from too much complexity in their technology infrastructure, data models and software maintenance, the consultancy said.

Having a large number of applications can make it hard for a company to scale up or down quickly when the business climate changes. The recent economic crisis was a test of that flexibility, Hackett said, "a test which most companies failed, some miserably so."

– MITCH BETTS

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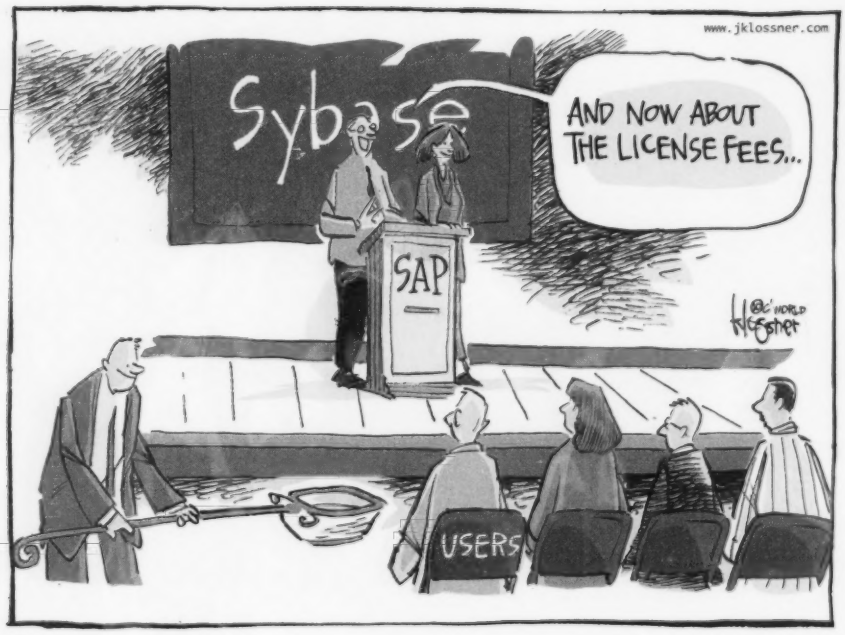
By John Klossner



SECURITY MONITOR

Phishing Attacks Blamed on 'Avalanche'

A **NEW REPORT** blames a single Eastern European gang for about two-thirds of all phishing attacks conducted in the second half of 2009.

The phishing group — named Avalanche by security researchers because of the large quantity of "crimeware" attacks it unleashes — was behind more than 84,000 of the nearly 127,000 phishing attacks tracked by the Anti-Phishing Working Group, an organization of security companies and law enforcement officials that analyzes phishing activity and publishes its findings in semiannual reports.

Avalanche used slick automated tools to crank out phishing attacks quickly for purposes of identity theft. The gang set up fake Web sites and then spammed potential victims with e-mail messages designed to trick them into typing in their usernames and passwords.

The group targeted about 40 institutions, including Yahoo Inc., Google Inc. and major U.S. and U.K. banks, said Greg Aaron, one of the authors of the report.

Avalanche first popped up in late 2008, not long after Rock Phish, the previous top phishing threat, dropped off the scene. Some security experts believe that Avalanche is simply using the next generation of phishing tools designed by Rock Phish's creators.

By October of last year, Avalanche was such a big problem that security companies and corporate victims began sharing previously private information about the attacks to develop ways of fighting back.

In November, several unnamed security companies got together and knocked out Avalanche's infrastructure for about a week, Aaron said. In the months since that takedown, Avalanche attacks have tapered off, he said.

Aaron noted that he doesn't know how long this quiet period will last, however. "We don't know if they're going to fade away or if they're going to change what they're doing somehow and ramp back up again."

– Robert McMillan, IDG News Service

Micro Burst

DATA OVERLOAD

The size of the "digital universe" – meaning the total amount of data created and replicated – was

800,000

petabytes last year, up 62% from 2008.

SOFTWARE

Developer Tool Spots Unclear Requirements

The first step in any application development project is to collect the user requirements. Get that wrong, and the project will be in trouble.

While there are automated tools to manage requirements after they're gathered, there aren't many tools for developing them in the first place. So Accenture Technology Labs is working to change that.

The R&D lab is building a suite of software tools that automate steps of the requirements development process while enforcing the use of well-known best practices, according to an Accenture blog post.

A tool developed to ensure clarity in the requirements document, for example, performs semantic and syntactic analyses to identify unclear text that could result in misunderstandings. (Poorly written requirements lead to rework, higher costs and delays.)

Accenture said it has used the requirements analysis tool on more than 200 IT projects and has seen "significant cost savings."

Other plans call for a "requirements acquisition assistant" and a "glossary development assistant."

– MITCH BETTS

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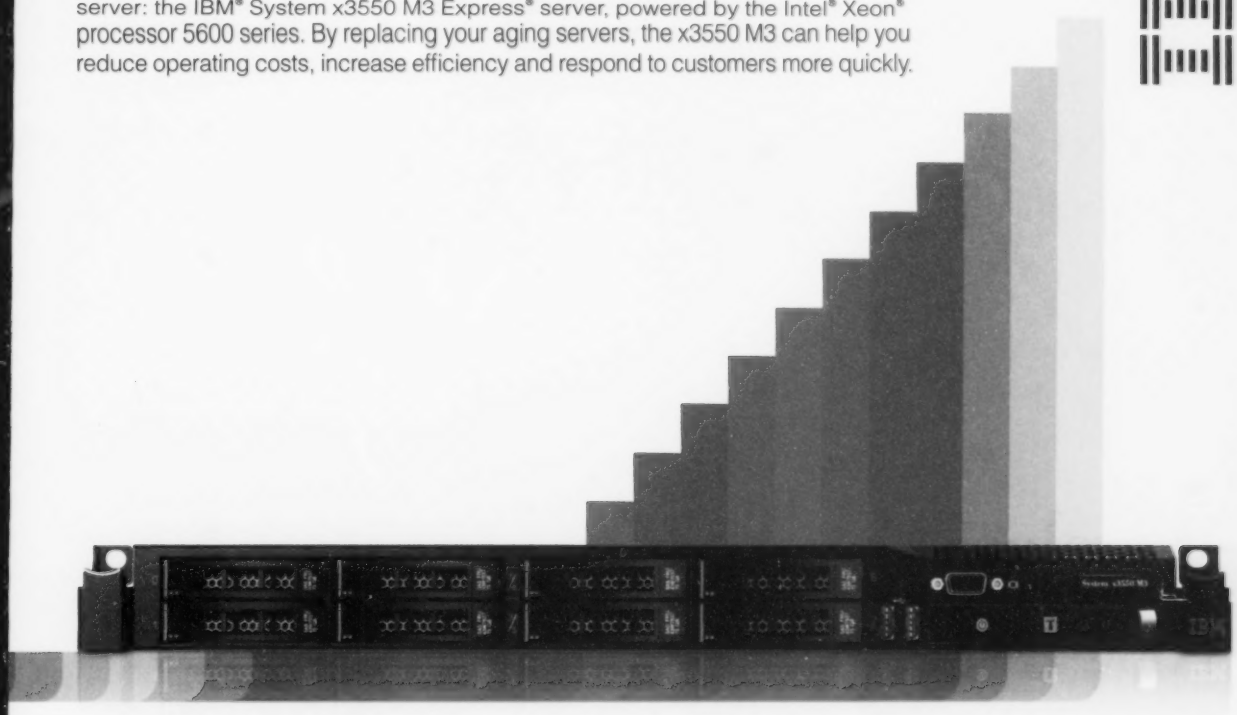

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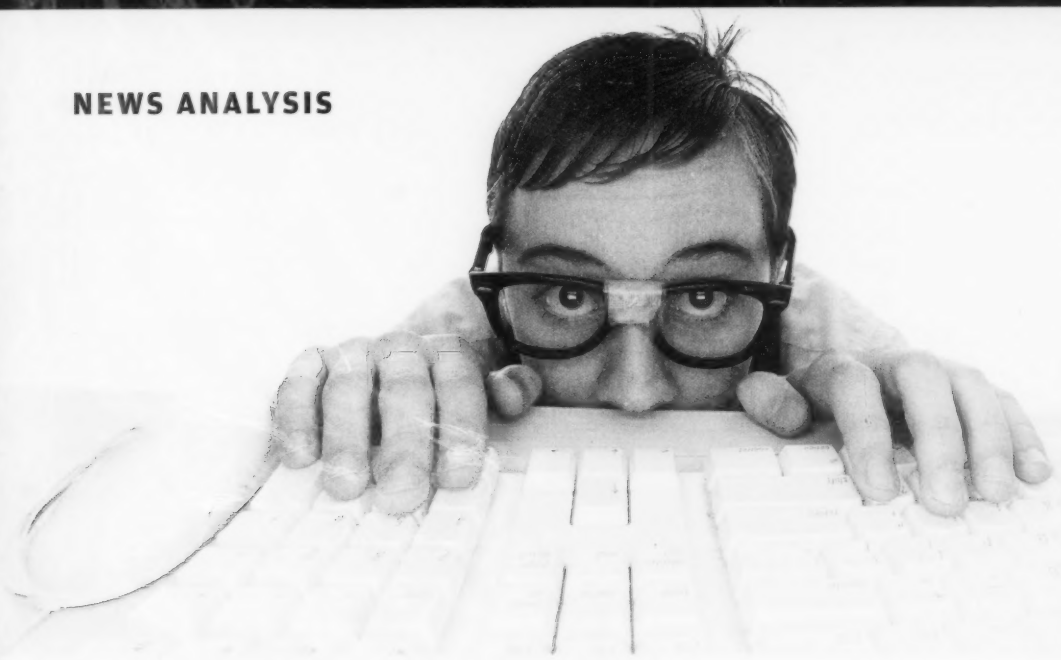

Wireless Causes Big Rise in IT Anxiety

Managing ever-evolving technologies and increasingly demanding users could prove to be a Herculean task for many IT managers. By Matt Hamblen

FROM WI-FI TO SMARTPHONES, wireless technology is ubiquitous in businesses of all sizes — and it's an increasing source of frustration for many an IT executive.

Brad Wright, vice president of global communications technology at Jacobs Engineering Group Inc., said in an e-mail that wireless technology causes a "HUGE" (his emphasis) amount of anxiety for large IT operations. Pasadena, Calif.-based Jacobs has 15,000 wireless users in 400 locations.

Supporting such large wireless setups is hard enough, Wright said. But the need to deal with constantly evolving technologies and ever more demanding users makes the task doubly difficult.

Most of the 10 IT managers interviewed for this story said their organizations are keeping up with the task of implementing and supporting wireless technologies. However, some expressed concern about the ability of their IT shops to maintain control over their wireless systems and keep them secure in the face of a deluge of new applications and smartphones. And they expect things to get even more difficult with the arrival of next-generation technologies like video over wireless and voice over Wi-Fi.

Some university IT operations have moved ahead of their corporate counterparts when it comes to implementing complex wireless systems, observers say. At Liberty University in Lynchburg, Va., IT managers use an Aruba Networks 802.11n wireless LAN to distribute 17 channels of IP-based television to dorms. That costs far less than providing TV service via coaxial cable or even Ethernet, said Jimmy Graham, manager of network services.

Such projects put Liberty ahead of the pack in the mobility game, at least for now, analysts said.

"In truth, few companies truly understand the ramifications of the future wireless transformations," said Jack Gold, an analyst at J.Gold Associates LLC. Video streaming, real-time collaboration and cloud-based applications accessed from mobile devices "will all have a profound effect on corporate networks, security and management of devices and users," he added.

John Rinaldi, system architect for service management and mobility at ThyssenKrupp Elevator AG, supports the mobile IT needs of some 15,000 workers. He suggested that companies need to set up dedicated groups or tap high-ranking executives to oversee their wireless efforts.

"The challenge now is in shaping the networks, the security and the software to enable a common set of capabilities," said Ken Dulaney, an analyst at Gartner Inc. "Networks are becoming borderless, but their capabilities are not homogeneous." ◆

> "In truth, **few companies truly understand the ramifications** of the future wireless transformations. — JACK GOLD, ANALYST, J.GOLD ASSOCIATES LLC

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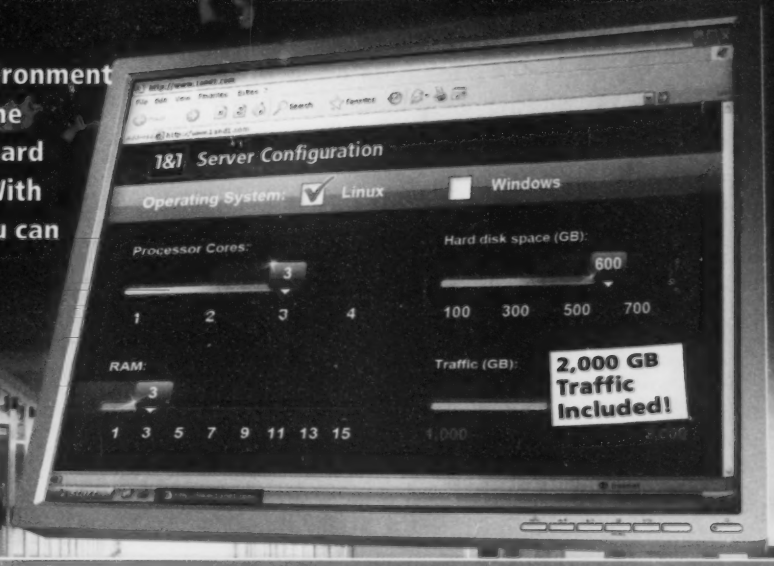

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SAP Mostly Mum On Sybase Plans

Analysts speculate that SAP will continue upgrading and selling most of Sybase's products – while increasing license fees. By Chris Kanaracus

SAP EXECUTIVES have said little about their plans for Sybase products once the enterprise software vendor's $5.8 billion deal to buy the Dublin, Calif., database maker closes, leaving Sybase users and partners wondering about the fate of technology that many of them depend on.

Customers were looking for hints of Sybase's future during the Sapphire user conference in Orlando last week but heard little other than SAP co-CEO Bill McDermott's pledge that the company will one day offer a full suite of ERP applications and business intelligence tools that can run on "any device, at any place, at any time."

> **"It should be possible for IQ to remain independent,** but there's some risk that [it] will get swept up in SAP's grander strategies.
>
> **CURT MONASH,** ANALYST, MONASH RESEARCH

Analysts said that's an indication that SAP plans to quickly move to integrate Sybase's mobile technologies with its own offerings. SAP executives had touted the mobile technologies of Sybase during a conference call earlier this month when they announced the deal, some noted.

Jeffrey Hammond, an analyst at Forrester Research Inc., said he expects that SAP will promptly take advantage of Sybase's mobile expertise. "[Mobile] is one of the hottest areas for future growth," he said, noting that the number of Forrester clients seeking advice on mobile development has "exploded" over the past couple of quarters.

The future of the various Sybase database products is less clear, said veteran database analyst Curt Monash of Monash Research.

He suggested that SAP will eventually de-emphasize its own MaxDB database for use with its ERP applications in favor of Sybase's Adaptive Server Enterprise. "That would be an incentive for further [SAP] investment" in Sybase's flagship ASE, Monash added.

Meanwhile, SAP's Business Objects unit currently partners with vendors selling business intelligence products that compete with the Sybase IQ columnar database, he noted. "It should be possible for IQ to remain independent, in co-opetition with everybody else, but there's some risk that [it] will get swept up in SAP's grander strategies," Monash said.

Ray Wang, an analyst at Altimeter Group, said that he expects SAP to retain most, if not all, Sybase products but added that users should brace themselves for potentially higher license fees. He noted that following its purchase of Business Objects in 2008, SAP jacked up prices and cut back on the discounts available for Business Objects products.

SAP officials did say that once the deal closes, Sybase will operate as a separate business unit, much like Business Objects.

The deal is expected to close in July. ◆

Kanaracus *is a reporter for the IDG News Service.*

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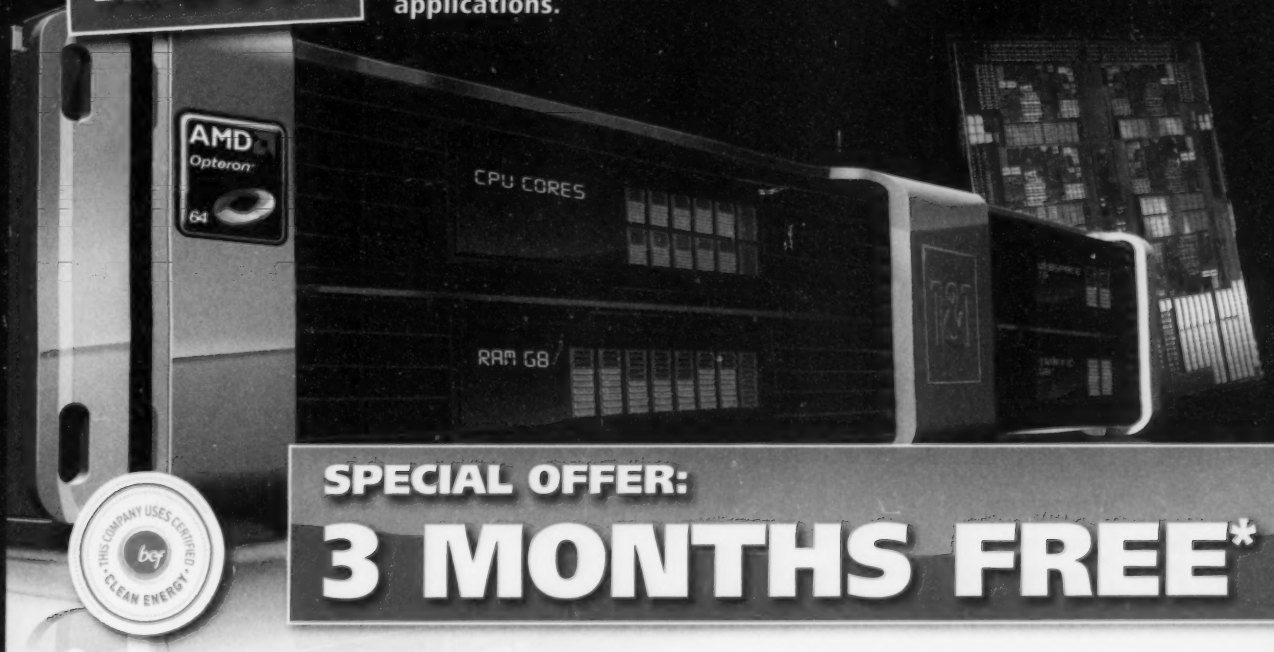

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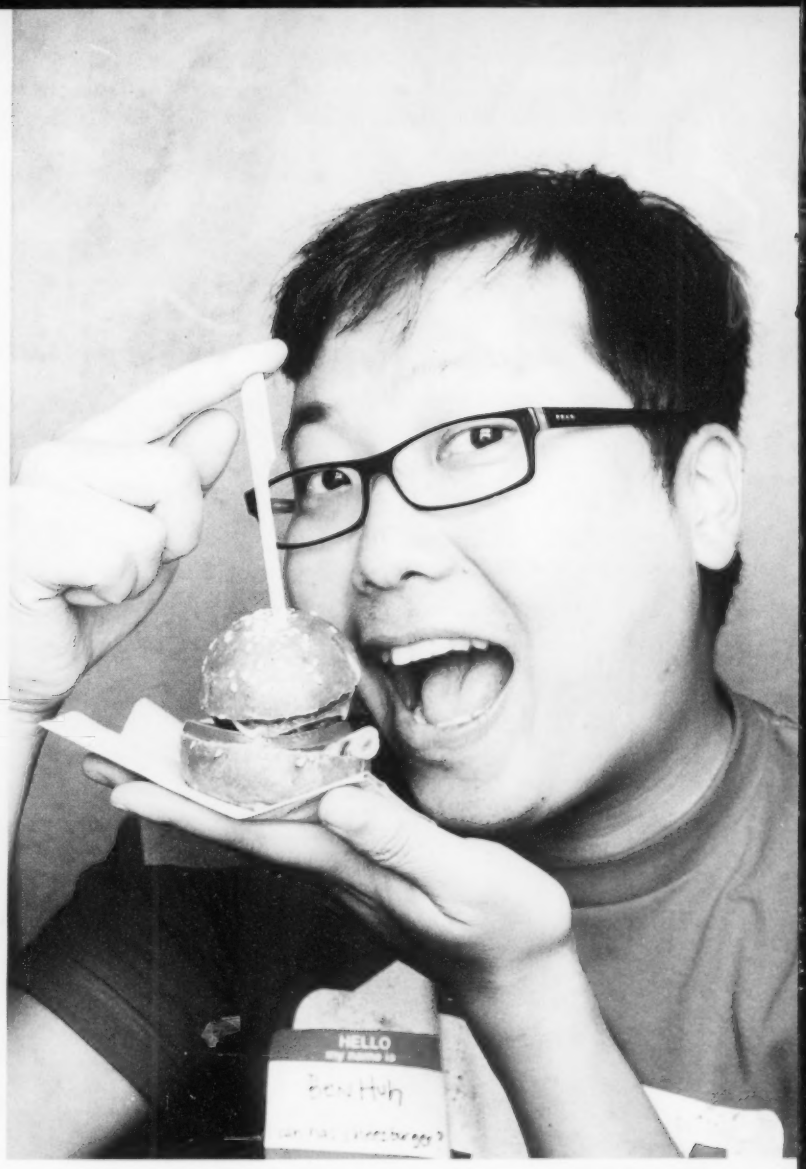
I'm allergic to cats.

What's your favorite technology?
Little mobile hot spots. Connectivity is really important, and knowing I can go somewhere and have people share it, make it communal, is really cool.

In high school, you were . . .
A publishing guy. I ran the yearbook and newspaper, and tried to start up a radio station, but I wasn't very good at that.

Philosophy in a nutshell: Have fun, help yourself, and help others.

Ask me to do anything but . . .
Be a beekeeper – I'm not a huge fan of insects.



AS CEO AND FOUNDER *of the Cheezburger Network, a family of 47 comedy sites that's growing by an average of one site per week, Ben Huh is a funster with a serious mission: to make people laugh and make money, too. Recently in Boston for the ROFLCon Internet culture conference at MIT, he talked about humor and online business models.*

What do you say to beleaguered network administrators who have to deal with the bandwidth-sucking comedy sites their users visit? Between Flash animations, photos and videos, if enough people send their favorite funny things around, it can seriously slow down or even crash a network. We never really considered that. We work in a high-bandwidth environment and assume others do, too, and that they have the bandwidth they need.

Why shouldn't companies block your sites? We occasionally get e-mails from people saying the site is blocked because of a corporate firewall. That doesn't happen often; it's not that big of a problem. But it's been well documented that taking breaks during the day can increase productivity. We need to educate more companies to look at the science behind that.

Continued on page 16

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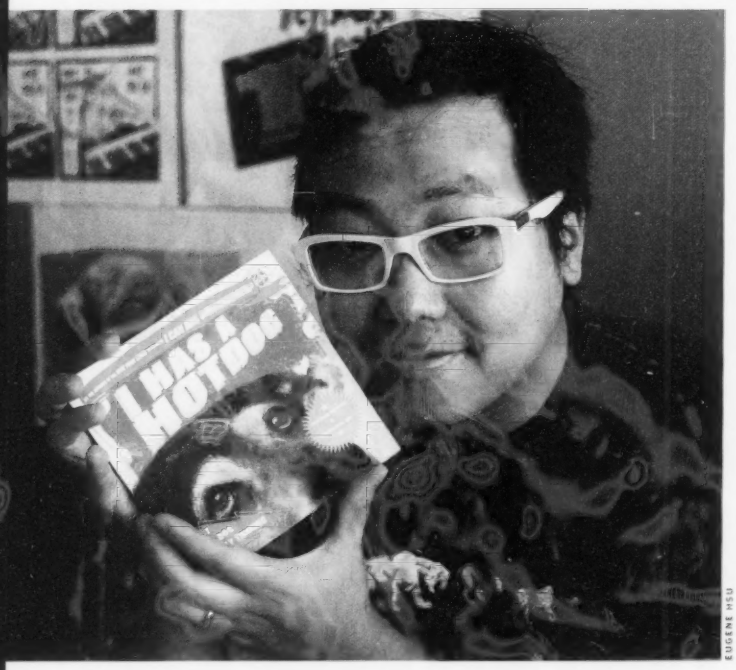

EUGENE HSU

"We innovate very rapidly — we add one site each week — and the great thing is that we can fail quickly, learn from it and move on.

Continued from page 14

Do techies have a sense of humor, and where do they rate versus those in other professions? Oh, absolutely they do. But it's like pi — it's not really on the same scale as other people. There's a subcultural humor that appeals to that technical audience. "I Can Has Cheezburger" is very popular with techies. Maybe that's because there's a higher percentage of techies who own cats — just anecdotally, I've noticed that in my discussions with people. Maybe they own cats because techies tend to be introverted.

Is your network, or any of the sites on it, going mobile? How do you translate some of the more visual jokes into that medium? We want to cater more to mobile users; we're just getting our strategy together for this. Until now, our strategy has mostly been to ignore mobile. We have an official application, by a freelance developer in Florida, but we're going to take more ownership of this and will buy the app outright. We don't really measure data [in terms of who is viewing our sites on which device or platform], but we know we have a lot of iPhone visitors. Of course, with the iPad there are fewer restrictions [on visual humor] than with the iPhone or BlackBerry.

You've said that you've got so many page views on your combined network that you can't possibly sell them all. Does that mean you'll need to broaden out beyond comedy? We're pretty much focused on that category — I call it "happiness drivers." It's not just jokes, but blogs and other things. Our mission is to make people happy for five minutes a day, and that's going to continue. We innovate very rapidly — we add one site each week — and the great thing is that we can fail quickly, learn from it and move on. Some things I can't predict; we just launched a site called "If Shoes Could Kill," devoted to women's weird shoes. I didn't like it and thought it would fail, but it's really taken off. It's already hit a million page views a month.

What sites haven't done well in the two-plus years since you've created your network? Around a dozen closed. One tried to boil down Wikipedia into a Twitter format, make any definition in 140 characters. A lot of people enjoyed it, but it never went mass appeal. I don't know why. Another was a video captioning system — you could add your own captions to a YouTube video. But then YouTube released its own captioning feature, so there wasn't any need for ours.

There's been some movement toward creating other metrics to measure Web performance, broader than page views. Where do you see that going? We've just moved from page views to unique users. We don't measure engagement — what percentage has been active in the past 30 days. That's a lot harder to measure.

You've recently published your fifth book, *I Has a Hot Dog*. Is there a crossover audience who buys the books and then comes to the sites? Books are a relatively small part of our revenues. But it has a network effect — they pass the books along to other people and tell them about us. The biggest sales occur in-store, not on our sites, so people are walking to the bookstore and buying the book.

We live in an increasingly politically correct world, yet you have sites that some might find offensive, such as "Engrish Funny." Are you worried that this kind of humor might become outdated or irrelevant at some point? Our data seems to [show] that people will share less but will still come to visit. People are very much in pursuit of happiness — human beings do that naturally — and as long as we can deliver on that promise, we'll still have an audience.

Are you at all concerned about contributing to the grammatical delinquency of a generation? I'm half-kidding, but educators do point to more "IM-speak" showing up in term papers and homework. And some of the names of your sites. . . . [Laughs.] One of the beauties of the English language is its ability to adapt. We've been complaining about our children for thousands of years. It is a valid concern, of course, but that's how English works — and the language will hopefully continue to grow.

– *Interview by* **Johanna Ambrosio**

Redefining X.

When an organization needs more computing power for today's memory-intensive workloads, the conventional wisdom is to buy more servers. This can lead to massive inefficiency and server sprawl, with the majority of servers today running at only 10% utilization[1]. As the computational demands of a smarter planet continue to explode, this sort of inefficiency has become a problem—a problem IBM engineers have now solved. The 5th generation of Enterprise X-Architecture® from IBM featuring the Intel® Xeon® Processor 7500 Series lets you add memory independently of the processor. As a result, IBM eX5 systems can leverage 6x more memory than current x86 servers, reduce storage costs by up to 97% and cut licensing fees by 50%[2].

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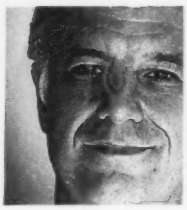
1. McKinsey study: http://www.datacenterknowledge.com/archives/2009/04/15/mckinsey-data-centers-cheaper-than-cloud/. 2. Comparison of IBM System x3850 X5 + MAX5 with total 96 DIMMs x 16 GB for total 1.5 TB of memory vs. IBM System x3850 M2 with 32 DIMMs x 8 GB = 256 GB. Comparison of processor-based licensing fees on current Generation 4 processor systems with 64 DIMMs vs. the IBM System x3690 + MAX5. IBM eXFlash technology would eliminate the need for a client to purchase two entry-level servers and 80 JBODs to support a 240,000 IOPs database environment, saving up to 97% in server and storage acquisition costs. IBM, the IBM logo, ibm.com, X-Architecture, Smarter Planet and the planet icon are trademarks of International Business Machines Corp., registered in many jurisdictions worldwide. A current list of IBM trademarks is available on the Web at www.ibm.com/legal/copytrade.shtml. Intel, the Intel logo, Xeon and Xeon Inside are trademarks or registered trademarks of Intel Corporation in the United States and other countries. © International Business Machines Corporation 2010.



OPINION

BART PERKINS

Certifications Are a Stop On the Road to Licensing

A software engineering license would be a model for other areas of the industry.

MY COLUMN "Certifications Are No Longer Optional" generated emotional responses on both sides of the issue, split roughly 50-50. I agree that certs aren't worthwhile if you're well respected within your company, close to retirement or employed by a company that doesn't value certification. But if you might change jobs in the next few years (voluntarily or not), certifications will strengthen your résumé.

And certs' relevance goes beyond that. They are the first step toward licensing IT professionals.

Many disciplines have established licensing procedures. Anyone working in those fields who lacks a license is severely restricted in what he can do. For example, accountants can offer tax preparation and bookkeeping services, but only CPAs can audit and certify a company's books.

How real is the prospect of IT licensing? In Britain, a Chartered Information Technology Professional license is awarded to IT professionals who meet strict criteria set by the British Computer Society. In the U.S., the National Council of Examiners for Engineering and Surveying offers a licensing exam for computer engineers, focusing on hardware architecture, networks, system software and digital devices.

The NCEES is working with state professional engineering groups and the IEEE to develop an exam for software engineers. (The Association for Computing Machinery supports the concept of licensing but has withdrawn from that effort.) While the scope of the exam is still being determined, the first version, with a likely focus on specific process-control functions, could be offered in 2013.

A software engineering license would be a model for other areas of the industry, such as infrastructure, operating systems, business applications and project management.

Licensing would be a major step forward for IT for reasons such as these:

- It would demonstrate a level of professionalism the industry has sought for many years.
- It would be an indicator of specific skills. That could help hiring managers with résumé triage.
- It would pave the way for common IT job titles and industrywide standards for job responsibilities and performance metrics.
- It could establish global competency levels for IT, a boon in a time of global outsourcing.

Once licensing is available, certain jobs might require licensed IT professionals. For example, the FDA could require that software-based medical devices be coded and tested by licensed developers. Regulators could also require that only licensed developers work on products that must meet strict safety standards, such as air traffic control software and automotive systems.

Not All Rosy

There is a downside. Licensed professionals are personally liable for their work and can be found guilty of malpractice. And an emphasis on licensing might override concerns about a job candidate's cultural fit within an organization. But the advantages far outweigh the challenges.

IT licensing is the culmination of many groups' efforts to gain respect for the IT industry and establish professional standards. Obviously, licensing is no substitute for years of experience. But it's a good first step toward defining effective industry standards of professionalism. Of course, we could always go back to the time-honored designations of "techies," "geeks" and "nerds."

Is licensing starting to sound any better? ◆

Bart Perkins is managing partner at Louisville, Ky.-based Leverage Partners Inc., which helps organizations invest well in IT. Contact him at BartPerkins@LeveragePartners.com.

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beyond ALIGNMENT

VIKTOR KOEN ILLUSTRATION

Meet the pioneers of extreme IT-business convergence. **At these companies, it's hard to tell IT and business apart.**

COVER STORY | **BY JULIA KING**

PAUL HELLER is CIO at Malvern, Pa.-based Vanguard Group Inc. — at least for now. He could very easily be plucked out of that job and reassigned to lead the company's multibillion-dollar retail mutual funds business. In fact, he's been there, done that, swapping jobs in 2006 with former Vanguard CIO Tim Buckley, who now helms the retail investor group.

Las Vegas-based Zappos.com Inc. is the No. 1 seller of shoes online. In 2009, it racked up sales of more than $1 billion. It stocks some 3 million pairs of shoes, offers free next-day shipping on all purchases and is known for its generous 365-day return policy and top-notch customer service. Behind the scenes, IT is embedded in everything Zappos does, from engineering and continually enhancing the customer's online experience to coordinating the warehouse robot system.

Forget IT-business alignment. Vanguard and Zappos.com are two of a small number of companies where business and IT are virtually indistinguishable. Others on an admittedly unscientific short list of pioneers in IT-business convergence are The Progressive Corp., Southwest Airlines Co. and The Procter & Gamble Co. What all of these companies have in common is that IT doesn't just support the business; it enables and continually transforms the business, often creating new revenue and profit streams (see story, page 24).

Moreover, CIOs and everyone else in IT at these companies know precisely how their businesses make money and lose money. In fact, it's not at all unusual for employees to rotate through several jobs, moving in and out of IT and business roles. "Rotation gives you context," says Buckley.

Another notable attribute: Customers of these companies are king, and customer service, both internal and external, is supreme. At Procter & Gamble, for example, dedicated client service teams from P&G's shared services group (which encompasses IT) meet with business unit presidents to discuss the terms of their IT supplier-customer relationship. Not coincidentally, this is the same way P&G's sales teams do business with their giant retail customers. In fact, it was P&G's lead relationship manager on the Wal-Mart customer team who helped coach IT on how to make these internal relationships work, notes Jim Fortner, P&G's vice president of IT development and operations.

One Bull's Eye

At all five companies, IT and the business are not so interested in aligning but rather are fully engaged in converging on an enterprise vision or goal that hovers above every department and project plan and is crystal clear to each and every employee.

"These IT-savvy companies are very targeted in what they're doing," says Jeanne Ross, director of MIT's Center for Information Systems Research. "Even if it's a very huge company, it doesn't lose sight of how it's going to deliver value or make money. There's real clarity in how they're going to do it."

At Vanguard, for example, that singular vision is about creating wealth for clients, typically for retirement. "We're really not all that complicated of a firm. We're not trying to do 100 different things, so there's not that classic tension between different businesses, and there aren't stovepipe systems. That is so not who we are," Heller says. "It's really all about running the firm, and it's about doing the right thing for the client. We all move between jobs, so it's not about your job; it's about wearing that bigger hat — the Vanguard hat."

At P&G, Fortner says the company's CEO has made his vision perfectly clear: Acquire 1 billion new consumers. "What I'm focused on is what IT can do to drive more product adoption," he says.

To help drive faster adoption of more products, IT has developed a virtualized environment that P&G uses to conduct product design work, product placement research and even consumer feedback studies. Among other things, IT has created virtual reality models to test design ideas for the next breakthrough in products such as diapers or cosmetics. Within these cyberworlds, P&G can rapidly test product performance and consumer response to various kinds of ingredient and packaging choices.

Another big push is to use visualization to help executives run their businesses in real time. This involves integrating product, con-

These Companies Seek Very Different Skills

GETTING an IT job at one of the companies where IT and business are fused together is a thoroughly unconventional experience.

Procter & Gamble, for example, is looking for IT professionals who have business skills as well as talents in the areas of graphic arts, product commercialization and data analysis. All of these skills are needed as IT pushes deeper into simulation and visualization as a way of doing business.

Zappos.com wants people who like to build things — engineering types.

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Virtually all of these companies are also looking for flexibility in their IT hires. That's because chances are good that the employees will be moving in and out of different departments and business units. Again, it's a great way to get to know the business, the CIOs say.

Chances are equally good that many of these newly hired IT professionals will spend many years of their careers at the same company. CIO Ray Voelker has spent his entire career at insurer Progressive. Every one of his direct reports has been with Progressive between 18 and 20 years.

One reason is growth. "In 1985 when I joined, our revenue for the whole year was less than half a billion dollars," he says. "Now, if we did less than $1 billion in a month, it would be a disaster for us.

"When you go through that kind of organic growth, there are plenty of opportunities," he notes. "People who stay thrive on growth and change. They're looking for ways to shake things up. There's really not a lot of mind-set here for pushing things around the edges."

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pioneers OF CONVERGENCE

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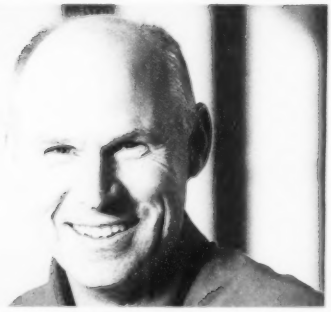

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Another key attribute of these convergence pioneers is a distinct and vibrant company culture that is immediately recognizable. When you fly Southwest, you can tell it's different from other airlines. Perhaps it's the flight attendants wearing sombreros or carnival beads. Or it could be the way the company tries to make everything orderly and straightforward, from its Web site and electronic ticketing system to the way it handles boarding.

The Vision Thing

Progressive markets itself as an insurance provider that offers customers choices. Its overarching goal is to make insurance easy to shop for, buy and own. Its strategy involves using highly automated underwriting software and exposing data to customers in an easily understandable way.

The company's exclusive IT-enabled online Name Your Price tool, for example, allows customers to choose the price they would like to pay for insurance and then see the coverage they can buy for that price. After entering basic car and driver information, shoppers are offered a customized insurance package that includes limits and deductibles closest to their named price. Shoppers can also manipulate an online dial to change various options, and the system instantly responds with information about how such changes will affect the price.

Progressive also allows customers to comparison-shop at its Web site, checking out what Allstate, State Farm or other competitors charge for the same coverage.

To enable this level of data transparency, IT developed software that allows Progressive to quickly extract pricing data filed with government regulators. "If State Farm changes its rates in Ohio, for example, we would immediately stop giving out State Farm rates and use our software to produce a rating algorithm that reproduces State Farm's rates," explains CIO Ray Voelker. "We needed to create a tool that lets our business people read a state regulatory filing and glean the key data to determine a rating algorithm for our competitors."

There is no way that an IT team could build such a system if it didn't thoroughly understand how insurance pricing works and how price fluctuations impact Progressive, says Voelker.

"Just having technical knowledge doesn't really help," he says. "We really stress that we want people to be conversant in technology but also understand the insurance business. Once you understand the insurance business, you know how important the cost structure is to the business. I never forget I'm in the insurance business. Technology is just part of the rhythm."

That's why virtually all new hires at Progressive take a core insurance curriculum at the company's IT University. After that, they spend at least a few years out in the business units "on assignments with lots of repetition," says Voelker, who spent several years early in his career in the claims business.

"I understand all of the [claims] issues, and I speak the same language," he says. In IT, "we have folks who understand the way a product works maybe even more than the product manager. Unless you're a hard-core infrastructure guy, it's hard to be effective in your job if you can't speak the language and understand all of the terms and the dynamics of the business."

Information transparency is a common denominator at companies where IT and the business are fully converged.

"It's everything from sharing financials to sharing project plans and statuses and issues," says Southwest Airlines CIO

Six Telltale Signs of IT-Business Convergence

Companies with a high degree of IT-business convergence do the following:

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- Regard their customers as kings and view customer service, both internal and external, as supreme.
- Rotate business and IT staffers across departments and job functions.
- Provide an overarching goal that is crystal clear to each and every IT and business employee.
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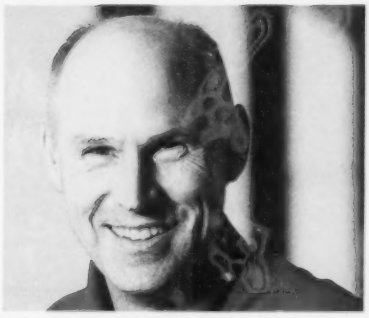

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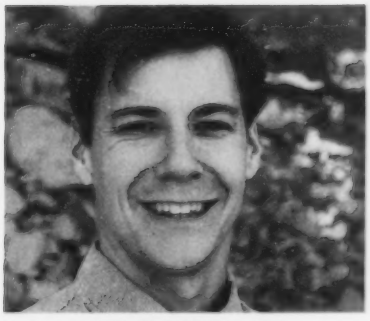

BRENT CROMLEY, IT chief, Zappos.com Inc.

PAUL HELLER, CIO, Vanguard Group Inc.

Jan Marshall. "I don't think there is anything within the context of the technology organization that I wouldn't feel comfortable sharing with my business customers."

This is essential because virtually all of the products Southwest has developed and implemented have been enabled by technology. The airline's Early Bird check-in service is a prime example. For an extra $10 each way, travelers can purchase this option via the Web site, which automatically checks them in 36 hours before their flight's scheduled departure time, securing them an earlier boarding position. (Other passengers can check in electronically a maximum of 24 hours before flight time.) Like most everything else at Southwest, this is all done online.

Marshall emphasizes that information transparency and clear communication channels are absolutely critical because Southwest's "whole customer thread and all of our fundamental transactions are very, very tightly integrated. If you make a change with the airline schedule, it has implications for how our flight crews are scheduled to work, how our airport operations might be affected and how we market our flight schedule on our Web site. We need to understand all of the implications when we make business or process change decisions."

To do this well requires team players, which is why Southwest hires IT professionals based on attitude first and then on technical and business skills. What constitutes the right attitude, Marshall says, is a passion for customer service and open communication. These are absolutely critical in the airline's 850-person IT group "because it is technology that is our product," she says.

Taking the Long View

Convergence pioneers do not develop and deploy IT as a solution to a particular problem. They design, build, integrate and operate technology for the long term. Essentially, their technology strategies boil down to first figuring out what is and what isn't going to change about their business, and then automating what isn't going to change, like financial processes.

The remaining business systems are built in-house as part of a highly flexible computing platform that can adapt to market demand for new products and services.

This IT-business convergence is clearly anything but the norm, according to McKinsey & Co.'s 2009 survey on IT strategy and spending. Of the 444 IT and business executives who responded, only 16% said they have put in place tightly coupled IT and business strategies, even though two-thirds of executives indicated that would be the ideal.

At Zappos, IT chief Brent Cromley says that he and others in IT "basically think of ourselves as [working in] an engineering shop. We have built almost all of our own systems, except we have an SAP financial system."

As for the main business platform, "we basically have an enterprise data warehouse where all of our data goes — Web site traffic, marketing data, merchandising analytics," Cromley explains. This is the system that handles the new business as Zappos expands its product and service offerings.

For example, when Zappos expanded into selling luggage, it had to set up a special place at its distribution center to store the new items, since suitcases are much bigger than shoes. On the systems side, the company needed to reconfigure its main data warehouse to reflect that change.

Vanguard's Heller says that "everything about Vanguard is long-term, and we think of business technology the same way."

For example, ever since the company launched its first Web site in 1995, it has been keenly focused on Web and now Web 2.0 technologies, says Buckley, "because even back then it was very clear to us that this was the main way we would interact with clients. We took a big bet in 1995, and we have accelerated investment in it ever since." Live webcasts and chat, internal and external blogs, biometric security tools and the first financial fund application for the iPhone are just a few examples of Vanguard's IT investments.

"Everyone knows these things have to last and they have to scale," says Heller.

The business results are in the numbers. From 2001 to 2010, Vanguard has grown from $580 billion in assets to $1.4 trillion — and technology has been a major driver of that growth, officials say.

Business results are similarly positive at other convergence pioneers. Southwest marked its 37th year of profitability in 2009. Zappos recorded gross merchandise sales of more than $1 billion in 2009 and was purchased by Amazon.com Inc. for $928 million. P&G's earnings per share were up 17% in 2009.

Looking ahead, Progressive's Voelker says business and IT will increasingly converge — even at companies that struggle with alignment. The next generation of employees will make it so.

"Young people entering the workforce understand that technology is everywhere and involved in everything. They grew up on technology," he notes. "When I talk to new hires, I always give a canned speech about how IT is involved in every aspect of the business. The speech is a lot shorter now." ◆

IT Develops Products, New Revenue Streams

GO TO ZAPPOS.COM for, say, a pair of red Clarks sandals in a size 8½, and you can see all of the Clarks sandals available in stock.

Go to Clarks.com and you'll be able to find all of the same information just as quickly. That's because a Zappos unit called Powered by Zappos built and runs the Clarks Web site.

Launched a little under two years ago, Powered by Zappos is a revenue-producing business and a direct offshoot of Zappos.com's IT department.

"If you buy a product from Clarks online, it's all Zappos underneath," notes Zappos IT chief Brent Cromley.

At Southwest Airlines, IT has similarly been tapped to create new products and services, such as the airline's Early Bird online check-in service. For an extra $10, travelers can get a preferred seat 36 hours before their flight's scheduled departure time.

Meanwhile, at Progressive, seamless IT makes it appear to customers as if the company sells and services home insurance, yet the fact is that Progressive sells only vehicle insurance.

"But we have partnerships with other companies that sell home insurance," explains CIO Ray Voelker. "Today, we're integrating software from other [types of insurance companies] to make it look and feel as though it's all coming from Progressive," he says, noting that the strategy produces incremental revenue.

— JULIA KING

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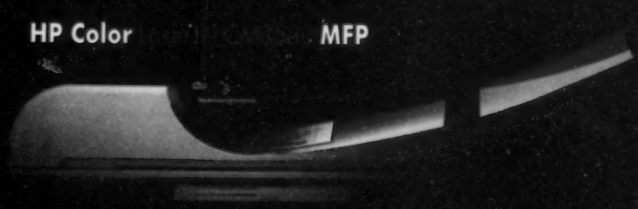

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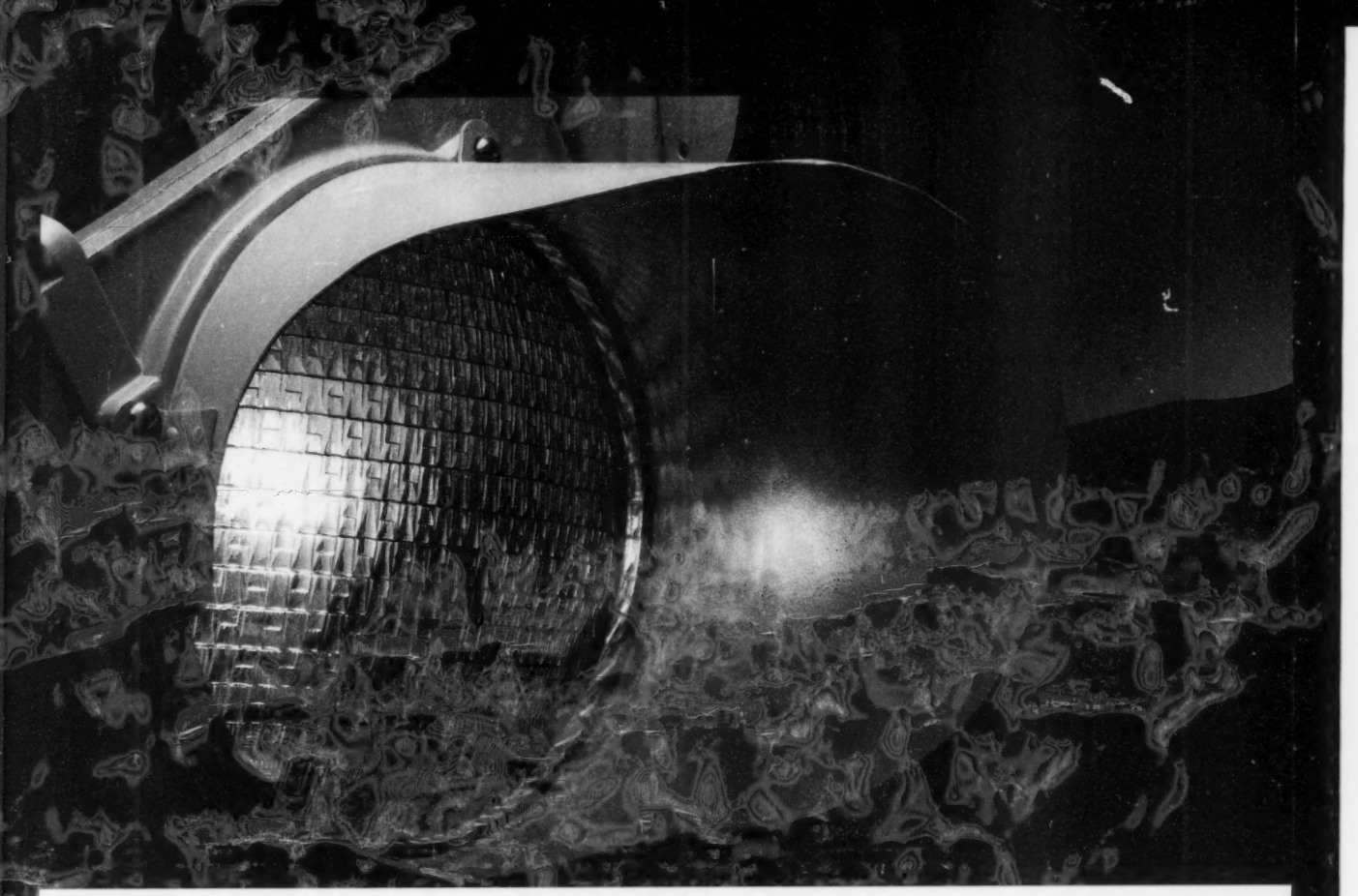

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OPERATING SYSTEMS

Windows 7 Gets the Green Light

AFTER TAKING A PASS ON VISTA, IT SHOPS ARE READY TO COMMIT TO MICROSOFT'S NEW PC OPERATING SYSTEM. BY ROBERT L. MITCHELL

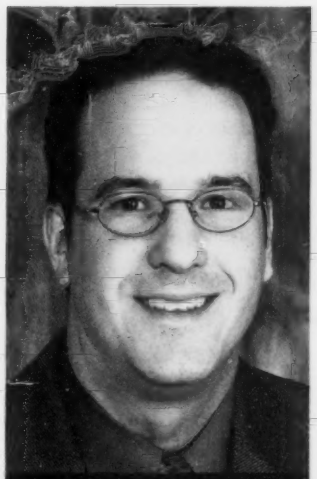
JIM THOMAS said no to Windows Vista — but Windows 7 is an entirely different matter.

Thomas, CIO at Pella Corp., says his IT team began beta-testing Vista's successor a year ago as an upgrade path from Windows XP. By October, just two months after Windows 7 launched, the Pella, Iowa-based window and door manufacturer had 225 Windows 7 clients up and running — and the feedback from both the IT staff and end users has been generally positive.

Pella is ready to move forward, Thomas says. "We will have 50% of our users — that's 2,500 machines — deployed on Windows 7 in 2010," he says. By the end of next year he expects

to have 90% of his users on the new operating system.

This time, IT organizations say, it looks like Microsoft Corp. has delivered the goods. And just in time. About 80% of IT organizations didn't adopt Vista, according to research firm Gartner Inc.



PAUL SHANE, IT director at Milliman, says he's "ready to move on" from aging Windows XP to Windows 7.

Instead, the vast majority of enterprise users remain on Windows XP, an eight-and-a-half-year-old operating system that should have passed into the high-tech fossil record long ago.

Computerworld surveyed 285 IT professionals to gauge their attitudes and intentions regarding Windows 7. Overall, 72% of the respondents said they plan to migrate to Windows 7, with 70% saying that they will implement it within a year or that they already are installing it.

The No. 1 reason cited for upgrading: to get off of Windows XP. That said, almost 40% of the survey respondents reported that they will continue using XP until Microsoft stops supporting it — in April 2014 — before they install Windows 7 on all of their Windows machines.

However, those willing to wait that long are in the minority. "We're ready to move on," says Paul Shane, IT director at the Philadelphia office of Milliman Inc., an actuarial consulting firm based in Seattle. He avoided Vista, but he expects to have most of his 150 desktops and laptops on Windows 7 by the end of this year. Disappointed with Vista, Shane briefly considered moving to Macs and the OS X operating system. But now, he says, "we've cast those aside."

Thomas and Shane both say they aren't even going to wait for the first service pack, which Gartner analyst Michael Silver says customers can expect sometime this summer.

What IT Wants

For IT, Windows 7 is an opportunity to take advantage of new features and better integration. Windows Server and Microsoft's System Center Configuration Manager, in particular, can save money by requiring fewer pieces of management software and can make managing desktops easier.

Art Sebastiano, vice president of infrastructure at Modus-Link Global Solutions Inc. in Waltham, Mass., has been testing Windows 7 on a few dozen machines for a rollout on 3,500 PCs in 30 locations around the world. He says Windows Server's account credential (password) caching capability, which facilitates single sign-on and allows access to networked resources when a domain controller is unavailable, works better with Windows 7 clients.

Survey Shows Nuances of IT Plans

When *Computerworld* surveyed 285 IT professionals to gauge their Windows 7 plans, 72% of the respondents said they plan to migrate to the new PC operating system. Here are more insights from our exclusive survey.

LEAVING XP BEHIND

Why is your organization planning to upgrade?

Note: Multiple responses allowed

Skipped Vista, Windows XP is getting old	64%
Need to keep current	45%
We paid for it as part of our enterprise license agreement	24%
Need to improve security	22%
We're also adopting other new desktop or server software and might as well get it all done at once	12%

NOT WAITING FOR SP1

Will your organization wait for the first service pack before deploying Windows 7 in a production environment?

Yes, we will wait	19%
No, we won't wait	34%
Expect first service pack to be available by the time we get around to deployment	26%
Service pack release is not a factor in our deployment plans	17%
Don't know	4%

TOP FIVE FEATURES

What new features in Windows 7 are of the most interest to your organization?

1.	More responsive, faster to boot up
2.	Better device management
3.	Compatibility with Windows XP
4.	Enterprise-specific features that work with Windows Server 2008
5. (tie)	Improved taskbar and full-screen previews
	Easier data recovery/protection

Base: 205 IT managers who plan to adopt Windows 7

SOURCE: COMPUTERWORLD ONLINE SURVEY, FEBRUARY 2010

Methodology: *Computerworld*'s survey about Windows 7 implementation plans ran online from Jan. 13 to Feb. 10, 2010. Research assistance: Mari Keefe, editorial project manager

VINCE BIDDLECOMBE, CTO at Transplace, says he'll wait to roll out Windows 7 until Office 2010 ships so he can do a wholesale upgrade and install both software products on 500 PCs.

The Procrastinators

Some IT departments are **waiting for the end of XP support** to move to Windows 7. For others, the obstacle is **financial.**

NOT EVERYONE is interested in upgrading to Windows 7 – at least not right away. *Computerworld*'s survey respondents who said they have no plans to upgrade reported that they just don't anticipate enough benefit, particularly in these tough economic times, to warrant the cost of migration.

For Carl Weddle, director of IT at Quality Trailer Products LLP, Windows 7 isn't even on the radar. "We were clawing our way out of a hole until a few months ago," he says, referring to the recession. Even in better times, he adds, "I tend to stay on the back end of the technology curve because it's cheaper there."

But procrastinating could be costly in the long run. Microsoft

Continued on next page

"Driver support and legacy compatibility have been good," Sebastiano says, adding that Microsoft offers a downloadable XP Mode program to facilitate backward compatibility.

Shane says group policy controls are improved in Windows 7. "We really love the new client group policy. You can manage a lot of things through group policy now that used to require a log-in script," he says.

At University HealthSystem Consortium in Oakbrook, Ill., a new Windows 7 feature called DirectAccess, which allows secure remote access without a separate VPN client and log-in, is a big win. Donald Naglich, director of technology infrastructure, says that for the half of his 275 users who use laptops, remote access will become more seamless. "It's one of the main reasons we want to [move to] Windows 7," he says. "It's one less piece of software we have to worry about from an integration standpoint." He plans to start migrating to Windows 7 early next year and hopes to have all systems upgraded by the end of 2011.

Pella is considering deploying DirectAccess for the same reasons. "Users don't like having to remember to launch a VPN client and log in," Thomas says.

Both Pella and Milliman see BitLocker, a Windows 7 feature that provides full volume encryption, as a solid win for laptop users. "We used a third-party product that didn't integrate well with Windows and had a separate password," says Shane. "Now we can secure laptops, and the encryption and security is transparent to the user."

The User Interface

IT executives say Windows 7 boots up faster than Vista, is more stable and removes the intrusive user access control pop-ups. But most end users didn't have Vista, so they tend to compare the Windows 7 user interface to Windows XP's.

ModusLink's Sebastiano says that on the whole, his users like the interface, particularly features like drag-and-drop "snap" resizing of windows for easy side-by-side comparisons, and taskbar previews.

But Shane says his users are split on the new taskbar — "People either love it or hate it." It's a challenge, he says, because he has users who can't navigate the Start menu in Windows XP to find programs. "If it's not a shortcut on the desktop, they're in trouble," he notes. He fears that another change to the taskbar may just add to user confusion.

Users also don't always understand Windows 7 libraries, a setup that replaces the standard folder metaphor with a more sophisticated model that allows groupings of files that may be stored in different locations. What's more, File Explorer defaults to the local library — even if you don't want users pointed there. Shane says that even administrators may find it annoying at first. "When you're rolling out a bunch of PCs on a network, it gets in the way," he says.

Shane says his users like Windows 7's interface improvements, such as those Sebastiano described, and more subtle changes, such as the way Windows automatically makes desktop icons bigger on larger screens with higher resolution. "That has helped users with poor eyesight," he says.

Users particularly like what he calls the "shake and bake" feature on the Aero desktop that lets the user minimize all open windows on-screen except for the currently selected one by simply grabbing and shaking that window from side to side.

Such features have been well received, "but users have to be told about them," he says.

Thomas warns that a migration from XP to Windows 7 will require some training. "Users haven't always gotten value from the tools we shove their way," he says. "This time we're spending more time upfront trying to understand where the values are and actually promoting that."

Remaining Challenges

Given a choice between bringing in Windows 7 on new machines and upgrading old ones, most organizations prefer the former. Most (58%) of the survey respondents, however, said they will also upgrade at least some existing machines.

One way to avoid replacing PCs is to use virtualization technologies. Naglich plans to do exactly that at University HealthSystem Consortium. And he's not alone in considering the use of desktop virtualization to ease the transition to Windows 7. Nearly one in five (18%) of IT professionals surveyed said they plan to move at least some Windows XP users from traditional Windows PCs to hosted virtual desktops as they migrate to Windows 7.

For existing hardware that meets Windows 7 system requirements, the usual upgrade issues apply. "Fresh installs are quick," Sebastiano says. On the other hand, while a Vista upgrade to Windows 7 is fairly straightforward, getting user profiles and settings moved over from XP is more challenging. He's looking at using Laplink Software Inc.'s PCmover to handle that.

Application compatibility is another potential challenge, particularly for older software. That's something Axium Healthcare Pharmacy Inc. may have to deal with. The online specialty pharmacy uses several internally developed Visual Basic 6 applications that won't run on Windows 7, not even with the XP Mode software. "A lot of ActiveX controls don't play at all," says Norbert Cointepoix, director of IT at Lake Mary, Fla.-based Axium.

But Matt Okuma has found that some applications run better. Okuma, enterprise architect at Best Technology Services, a business unit of Pacific Coast Building Products Inc. in Rancho Cordova, Calif., says his Cisco Unified Communications software never worked properly on about 100 of the Vista machines he rolled out. Some of those, he says, had to be rolled back to Windows XP. With Windows 7, however, it runs just fine. "We love it. Everything just works," he says.

"The biggest issue is making sure you do application compatibility testing," Pella's Thomas says. Pella's IT staff has had to update software releases and work through issues on some of the company's approximately 400 applications. Pella is still doing compatibility testing; it started with the applications used by the greatest number of employees. "Our issue has been on older apps that didn't necessarily follow current development guidelines," Thomas says, explaining that the company had to make "small adjustments" on approximately 20% of its applications, or get updates if newer releases were available.

In general, he says, "we haven't had too many applications that we haven't been able to get running."

Overall, after living with XP for more than eight years, IT leaders at most organizations say they finally feel comfortable moving on. Shane says he expects the transition at Milliman to go smoothly. "It's not something completely new," he says. "They just made a better Vista." ◆

Continued from previous page

says it will end support for Windows XP with Service Pack 3 on April 8, 2014. (Organizations still using SP2 will lose support in 2012). Companies that wait too long – or whose migration projects get too far behind schedule – may get stuck paying for custom support, under which access to critical security fixes could cost more than $200,000 per year.

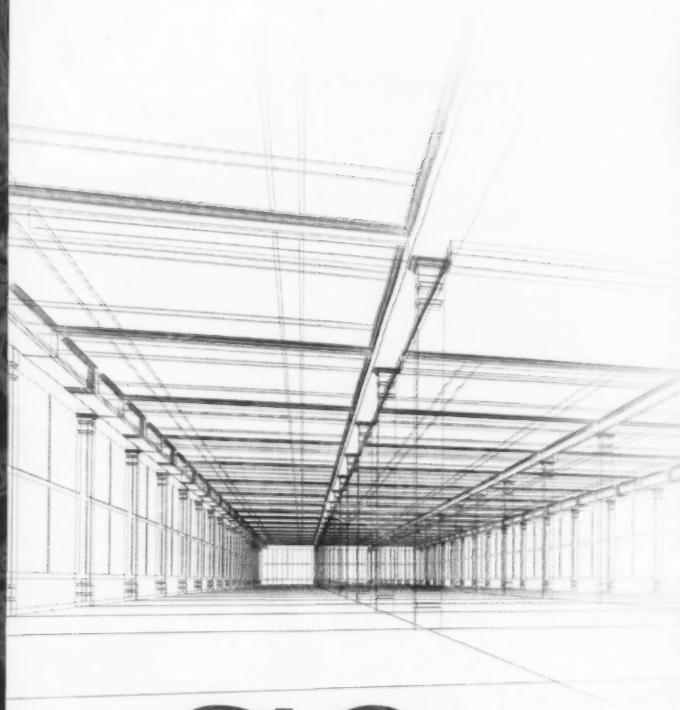
Microsoft has pushed back support dates before, and some organizations are staying on the sidelines to see if that happens again. "We'll wait and see if Microsoft talks about extending that," says Norbert Cointepoix, director of IT at Axium Healthcare Pharmacy. And Sean Seay, corporate director of infrastructure at Premier Health Partners, isn't in a rush to upgrade the health care provider's 10,000-plus Windows XP computers. "We hope Microsoft extends" XP support, he says.

But don't count on Microsoft sliding the end-of-support date this time. Gartner analyst Michael Silver says the company may have learned to stand firm on such matters. "Every time they delay end of support, companies delay plans to get off the old OS," he says. He suggests that organizations should start migrating now, noting that XP will be more than 12 years old in 2014.

Vince Biddlecombe had another reason to wait: Office 2010, which launched earlier this month. Biddlecombe, chief technology officer at logistics service provider Transplace Inc. in Frisco, Texas, says he'll do a wholesale replacement of about 500 desktops along with his Windows 7 migration, now that Office 2010 has shipped for businesses. "It didn't seem like a good idea to roll out a whole new bunch of desktops and then turn around and have to do an Office 2010 upgrade," he says.

Waiting for Office 2010 before deploying Windows 7 may kill two birds with one stone, but Silver notes that it will also make upgrading more complicated.

– ROBERT L. MITCHELL



CIOs WELCOME new FRAMEWORK

This little-known IT maturity model provides another tool for boosting IT effectiveness.

BY MATT HAMBLEN

CIOs HAVE LONG STRUGGLED to measure and demonstrate the business value of IT investments. But there's a relatively new approach to making IT investment and operating decisions — and then proving their value to shareholders — called the IT Capability Maturity Framework.

The IT-CMF approach fills in the gaps of some better-known IT management framework schemes such as Information Technology Infrastructure Library (ITIL) and Six Sigma, according to IT leaders who have used the new assessment tool.

IT-CMF ranks organizations on the maturity of the approach they use to handle 36 IT processes, giving them scores of 1 to 5 in each area, with 5 being the best. The processes are broadly divided into four areas:

- Managing IT like a business by focusing on customers and services.
- Managing the IT budget to deliver better value and performance.
- Managing IT capabilities and developing core competencies.
- Managing IT for business value by linking IT investments to overall business benefits.

Vincenzo Marchese, group enterprise architect at oil giant BP PLC, says that he has used portions of the IT-CMF assessment for two years within an IT group that has 3,000 workers, including 250 architects, who oversee 700 active projects.

IT-CMF is "a key measure to track how we do over time, but it is one measure," Marchese says. On one facet of IT management called enterprise architecture management, BP was assessed a Level 2 IT-CMF rating in 2008 and rose to a Level 3 in 2009 after making some changes, he says. In another example, when morale in BP's IT unit was fairly low after a restructuring, the IT-CMF assessment helped identify changes — such as adopting new training programs and well-defined career paths — that helped bring BP up to a Level 4 in that area, Marchese says.

The IT-CMF system was developed by the Innovation Value Institute, based on concepts in *Managing Information Technology for Business Value*, a 2004 book by Martin Curley.

IVI was co-founded in 2006 by Intel Corp., Boston Consulting Group and the National University of Ireland, Maynooth. The university uses some IT-CMF concepts in IT management courses, and about 15 other universities in the U.S., Europe and Australia are following suit.

Andrew Agerbak, a principal at Boston Consulting Group, says he reviewed 120 high-level IT-CMF assessments performed on various IT groups, of which more than 20 were detailed assessments, and found the IT maturity level "relatively low" even though some companies that were studied had invested billions of dollars in IT.

One trend Agerbak noticed is that IT shops show "tremendous maturity around getting technology processes approved" by the larger organization but are "weak" when it comes to their ability to track and describe the benefits of a system once it's deployed. "Benefits tracking is weak, with no established processes," and there is frequently no defined, accountable person or group assigned to track benefits, he says.

John Ellenberger, director of research at SAP AG, says the IT-CMF assessment could help IT shops struggling with changes in technology, including the influx of smartphones that workers buy on their own and use for work-related tasks even if the company's IT department is not prepared to fully support them.

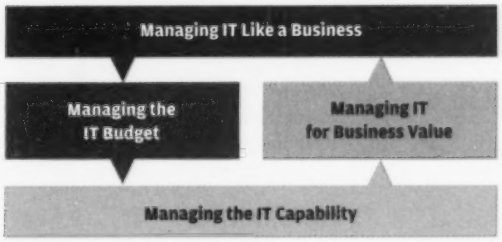
ILLUSTRATIONS © FOTOLIA / ROMAN SAKHNO

IT-CMF: At a Glance

Defined: The IT Capability Maturity Framework is designed to evaluate an organization's IT maturity level, benchmark it against industry peers and best practices, and identify a road map for improvement. The IT-CMF highlights a company's key maturity gaps and any potential areas of overinvestment.

A sampling of corporations whose IT departments are using the framework: Analog Devices Inc., BP PLC, Chevron Corp., Intel Corp., Merck & Co.

The framework has four interrelated strategies:



SOURCE: INNOVATION VALUE INSTITUTE, NATIONAL UNIVERSITY OF IRELAND, MAYNOOTH

"With the consumerization of IT, people are buying iPhones and bringing them in, and the IT guys are not getting a lot of help moving applications from laptops to the iPhone," Ellenberger says. "And Apple is not offering IT training at this point, which puts a lot of pressure on key IT processes and mechanisms that IT-CMF helps deal with."

Peter Forte, CIO at Analog Devices Inc., says his company is considering using IT-CMF as it continues to adjust to layoffs that occurred more than a year ago. In IT, 30% of his staff was let go, leaving 150 people who spend 80% of their time and resources maintaining systems, with little time to develop new ones, he says. Analog Devices makes 60,000 different signal-processing integrated circuits, and the IT staff is responsible for the systems and networks that support many areas of that work, including those used by design engineers who develop new products.

"With a new CFO, we're really driving down costs hard," Forte says. "With 80% of our resources focused on keeping the lights on, we're out of balance, and some wonder why we shouldn't outsource IT."

Facing the outsourcing threat, Forte says he has to transform his IT group from one that has depended heavily on "the knowledge in people's heads" to one that relies on defined processes. "We really have to move ourselves from people-managed to process-managed," he says. "And that requires a framework approach, and this IT-CMF is comprehensive and would fit the bill." ◆

This story was reported from a recent Innovation Value Institute conference in Boston; many of the user comments were part of formal presentations.

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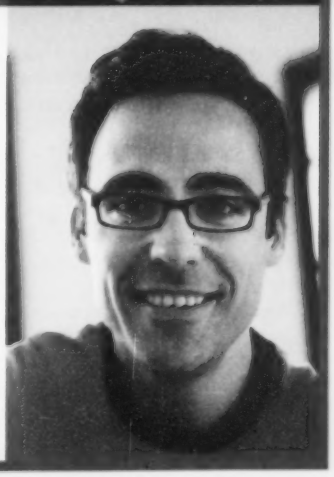

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Security Manager's Journal

MATHIAS THURMAN

Virtual PCs Need Real Security

A plan for a companywide virtual desktop infrastructure demands new security requirements.

IF MY CIO HAD HIS WAY, he would move the entire company to a virtual desktop environment. In his mind, it would be a cure-all for the costs of supporting thousands of PCs and the headaches caused by software distribution, security patching and configuration management.

It may do all of that, but naturally, as a security professional, I'm focused on how a virtual desktop infrastructure would affect our security posture. Thus, I spent the week developing security requirements for a VDI deployment.

Our VDI deployment would involve installing a small software plug-in on each PC. When such a PC is connected to our internal network, a virtual desktop environment will run on top of the PC — a Windows desktop displayed within Windows.

So, how does that affect security? That's what I pondered as I set up my requirements, and my conclusion was that our security posture should be unaffected, and possibly enhanced, but only if VDI is properly implemented.

My first and most important requirement is that data can't be allowed to move in either direction between the virtual desktop and the host PC or any external devices.

Next is the question of the integrity of the host PCs. No one should think that VDI will free us from the headaches associated with configuration management, patch distribution and antimalware software updates. That's because in our deployment, VDI is simply an application that runs on a PC. The PC still boots up into a Windows operating system and may or may not be attached to our company's network. Yes, VDI deployed in this way will allow for centralized configuration management, but it will do nothing for the host PCs. Security patches and antivirus updates will still have to be applied to the host PCs.

And speaking of centralized configuration, one size should not fit all. The virtual desktop environment of a general employee shouldn't be the same as the virtual desktop environment set up for a contractor, partner, supplier, vendor or other affiliate. I don't want to require a plethora of profiles, but some high-level order will need to be in place to satisfy my "rule of least privilege" requirement so that we don't expose critical applications and data to unauthorized people.

Another consideration for me involves the log-on banners that users must read before clicking "accept" and logging in. We can't lose this feature, since we have a legal requirement to let users know about their responsibilities and our practice of monitoring activity.

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More Worries

We also can't compromise our remote access policy, which calls for two-factor authentication and the use of a VPN. This is necessary because I can't vouch for the integrity of, say, the Internet kiosk in Moscow. I have to assume that every PC is compromised and that keystroke-capture software and a sniffer is installed. Two-factor authentication and a VPN are our current means of reducing that risk.

The same goes for application and screen timeouts. With employees all over the world, we can't ensure that someone won't walk away from his PC from time to time, leaving some sensitive data exposed in a running application. For that reason, we force a timeout, and the user has to log back in with two-factor authentication upon his return.

Finally, we need the ability to identify the relationship between each user and his issued VDI, as well as exception alerting to keep us informed about any suspicious activity (such as a user launching an excessive number of VDI environments, logging in from a location inconsistent with his profile, or making multiple access attempts).

Did I miss anything? Let me know. ◆

This week's journal is written by a real security manager, ***"Mathias Thurman,"*** *whose name and employer have been disguised for obvious reasons. Contact him at mathias_thurman@yahoo.com.*

"No one should think that VDI will free us from the headaches of patch distribution.

Trouble Ticket

At issue: The CIO wants every PC to run a virtual desktop environment.

Action plan: Draw up new requirements that leave the company's security posture uncompromised.

Taking Enterprise Application Integration into the Cloud

BY BOB MOUL

The reputation that integration has garnered over the years as an ugly, unwieldy problem is almost entirely due to the way integration software was previously built and delivered as opposed to the actual integration projects themselves. Fortunately, the SaaS model has led to a fundamentally different way of thinking about application design and delivery – one that makes possible a new and vastly more efficient model for delivering integration – even if you are not engaged with cloud computing or using SaaS applications.

Genesis of Complexity

Integration by definition is a distributed function. Applications run on multiple systems in multiple locations using multiple databases and files. Therefore, integration processes also need to be distributed – executing in any number of places where integration of systems is required.

In the traditional model of developing software, the approach was to build a standalone application (or suite) and then commercialize it by selling copies of that application to as many customers as possible. In this model, as the number of copies and versions of the application increase, the support costs increase dramatically while the innovation cycles come to a near standstill.

Implications for Integration

When this model is applied to the world of data and application integration, it inherently creates a number of complexities, such as security and governance challenges, that have plagued the industry for decades. Vendors of integration products, using the traditional model of developing software, built all administrative and execution functionality into one product. Customers would then deploy scores of these integration stacks in order to meet their business requirements.

The impact of this scenario was that not only was the necessary runtime distributed across the enterprise, but the functionality to build, deploy and manage the integration processes was also replicated across the enterprise. Having multiple instances of what would ideally be centralized administrative and management functions created a maintenance nightmare and weakened governance and controls. Nearly every major integration challenge – including version control, data visibility, auditability, policy enforcement and governance are the result of this legacy style of software development and deployment.

A New Approach

The SaaS model has led to a fundamentally different way of thinking about application design and delivery. In the SaaS model, considerable focus is placed on designing an application whereby there is only one copy but that any number of customers can use (and customize for their unique needs).

When SaaS concepts are applied to the domain of data and application integration, an entirely new and vastly more efficient delivery model is made possible – even if you are not currently using SaaS applications. Cloud-based integration platforms allow you to design, build, monitor, and manage integrations centrally (from the cloud) yet deploy just the runtime to where the integration needs to occur – either in the cloud or on premise.

Separating the runtime, while unifying the administrative and management functions, eliminates unneeded complexity and dramatically increases the quality of areas such as data visibility and control, auditing and reporting, and policy standardization and enforcement. And because cloud integration platforms are built with SaaS technology and concepts, they deliver the same benefits as SaaS applications themselves including significantly reduced cost structure, elimination of maintenance and upgrade headaches and the ability to procure services in a usage-based pricing model.

Conclusion

SaaS technology is changing the way applications are designed, developed and delivered. When these concepts are applied to the world of application and data integration, an entirely new and vastly more efficient model for delivering integration is made possible – one that greatly simplifies decades old challenges such as configuration management and governance.

Learn More

Sponsored by Boomi, "Taking Enterprise Application Integration into the Cloud", is available in its entirety, exclusively at **www.boomi.com/whitepapers**.

Bob Moul is the President and CEO of Boomi. He has led the company's successful transformation from a traditional software product company to a leading infrastructure provider in the SaaS and cloud computing industry.

Boomi is the market-leading provider of on-demand integration technology and the creator of AtomSphere®, the industry's #1 Integration Cloud™. AtomSphere allows anyone to connect any combination of SaaS, cloud, and on-premise applications via a pure SaaS integration platform ,that does not require software or appliances.

PAUL GLEN

Think Politics Aren't Part Of Your Job? Think Again

Managers hold many misconceptions about the role of politics in the corporation.

IN THE COURSE of consulting for and coaching IT managers, the complaints I hear most often involve politics. "I'd love my job if it weren't for the politics." "This would be a great place to work if not for the politics." "Politics aren't my job. Why do I spend so much time on them?"

These frustrations are usually expressed with an underlying sadness or even anger. The persistent presence and gritty reality of politics come as a surprise and a disappointment to most technical managers.

I think this is so because many managers hold the following deep-seated misconceptions about the role of politics in the corporation:

Politics shouldn't be necessary. Many managers figure that if everyone is focused on the best interests of the business, there should be no need to argue so much over priorities and turf.

Politics represent a failure. If you believe that politics are unnecessary, then you are also likely to believe that creating alliances and undermining other people or ideas is the result of a moral failing. If a manager holds such a viewpoint, then politics will always seem to be driven primarily by negative forces, including misperception, miscommunication, self-centeredness, greed, pride, ambition and neurosis.

Playing at politics is not in my job description. Most IT managers rise through the technical ranks. The virtues they aspire to involve building and maintaining quality systems and providing quality technical services. So it's natural that technical managers come to the job assuming that their most important responsibility is to oversee the creation and support of technology. They view politics, at best, as a distraction from their primary mission and an obstacle to progress.

But the reality is that politics will never be expunged from professional life, and that is mainly because they play a very positive role. Those three misconceptions should be stood on their head:

Politics are a necessary part of the provision of technical services. The notion of politics as a diversion rests on a misunderstanding of what politics are about in the first place. Politics are not the seamy underbelly of management. They are the way groups make decisions about priorities, processes and resource allocation. If managers want their building and maintenance plans to be considered important enough for the organization to invest the required money and attention, they need to engage in the political process.

Politics are a form of cooperation. Since organizations need to make collective decisions, politics do not represent a failure but a necessary function. It's true that sometimes the animating forces driving a particular issue or person may be unsavory. And the culture in which politics are carried out may not be healthy or functional. But the politics themselves are a separate matter.

Politics really are a big part of your job. Political astuteness is one of the most important tools you have for creating an environment in which people can develop and maintain great technology. You need to acquire the resources, attention and prestige necessary to deliver value to the organization. As managers move up the ladder, overseeing the actual provision becomes a smaller and smaller portion of the job, and politics become a bigger and bigger one.

To rage against immutable truths is to court disappointment. Being successful as a technical manager requires reconceptualizing politics and reconciling yourself to their role in the job. ◆

Paul Glen is a consultant who helps technical organizations improve productivity through leadership, and the author of the award-winning book *Leading Geeks* (Jossey-Bass, 2003). You can contact him at info@paulglen.com.

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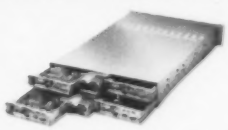

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Career Watch

A Blog for Grads

NEW COLLEGE GRADUATES who are at sea about how to go about landing that first, entry-level job might want to check out One Day, One Job. The blog, begun in 2007 by Willy Franzen, a 2006 graduate of Cornell University, highlights one interesting company per day. (There seem to be many ways to meet Franzen's "interesting" criterion.) Franzen tells you about the company and offers advice for approaching it. As Franzen says on the site, "Too much job seeker attention goes to the top handful of companies that hire at the entry level. We want to open your eyes to the thousands of opportunities available to you, one day at a time."

Franzen says the idea for the site arose after he spent months fruitlessly trying to find an entry-level job himself. One Day, One Job has archived articles offering job search advice and features a section called "Things to Get You Through the Job Search."

Another appealing aspect of the site is that it lets you browse entry-level jobs by tag. Those tags appear to be arranged in a haphazard manner (they're listed alphabetically, but words run into each other), except that the size of the type for each tag is correlated to the number of topics linked to it. One of the larger tags is "software development." You'll also find "Web development," "information technology" and "project management."

– JAMIE ECKLE

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ASK A PREMIER 100 IT LEADER

Manish Shah

SymphonyIRI Group's *senior vice president for IT answers questions about résumé gaps and leaving a consulting job.*

I had to leave my job as a network administrator for health reasons. I'm fine now, but I'm having a hard time getting back into the workforce. What should I tell prospective employers about that two-year gap? It feels like a private matter to me. Reflecting on oneself is an important aspect of career development, and it's absolutely justifiable to take time off to rejuvenate – whether it's for health, family or any other reason.

The most appropriate way to address the interviewer is to be as forthright and honest as possible without disclosing your personal circumstances. In this day and age, I think it's absolutely fine to have gaps in your résumé. It's not as negative as it used to be, as long as you convey strongly how your experience makes you the best possible candidate for the position. And remember, it's always advantageous to be optimistic – it could even make a big résumé gap seem unimportant.

If you have a question for one of our Premier 100 IT Leaders, send it to **askaleader@computerworld.com**, and watch for this column each month.

I've been a consultant for the past five years, and I'm tired of all the travel. While that does seem like a rational reason to seek a permanent position, I can see that it isn't enough to win over a prospective employer. If you were interviewing someone like me, what would you want to hear me tell you about my desire to work for you? As long as you're able to bridge the differences between consulting and having a steady position, you're good to go. Working in IT, I often see consultants who are looking for a solid position in which to contribute consistently to a single organization. I recommend you use your consulting experiences and successes to your advantage to position yourself as a diversified candidate. Keep in mind that people with long tenures usually don't have as diverse and adaptive a background as yours. You may be able to adapt to change better than they can. That's a quality I look for in candidates I interview. I'm not saying that employees with tenure don't have their good points, but as an employer, I seek to compose a staff of mixed professional backgrounds. That gives the organization a competitive edge.

Tie your successes in the consulting role to the company with which you're interviewing. Explain how your experiences have molded you into a diversified professional, enabling you to go broader and deeper into the organization than someone who has established longevity in a role. As someone with a consultancy background, you can become one of the company's most valuable resources.

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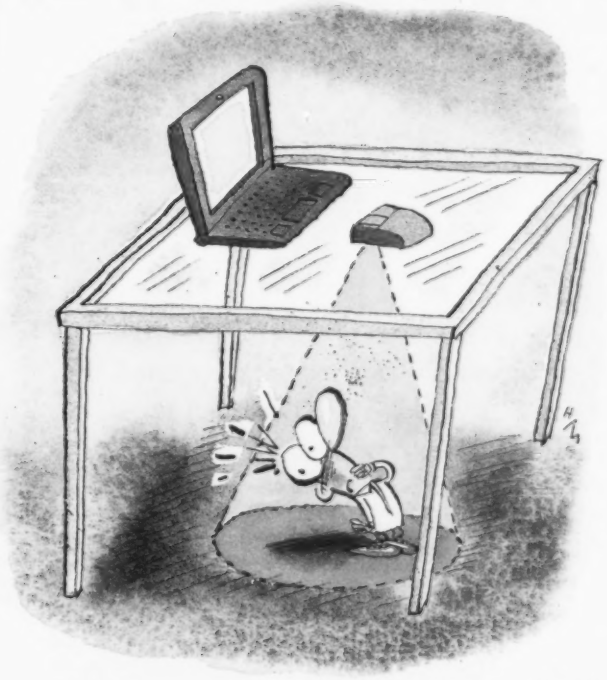

HAL MAYFORTH

Sometimes the Problem Is Clear

IT pilot fish at a law firm gets a call from a user who's on the road – and spitting mad. "It took me a number of minutes to calm him down enough to get the whole story," says fish. "He was in a hotel somewhere trying to connect to the VPN, and he simply could not use his mouse. It was driving him crazy. Every time he moved the mouse, the cursor would bounce around, he would lose control, and so on. I finally determined it was an external mouse. I talked him through trying the finger pad on the laptop, and it worked, but he wasn't much of a traveler, so his ability to use it was limited. After about 20 minutes of this, I had him check the bottom of the mouse. Everything seemed fine, red light was shining. It was then I asked him what he was using for a mouse pad. It was a clear glass table in the hotel room."

If I Don't Get It, You Don't Get It

Net admin pilot fish at a manufacturing facility spends a lot of time at outer buildings, troubleshooting and resolving issues. "Usually what this entails is either running back to my desk and checking e-mail and voice mail, or being dispatched 'on the road' with a company-provided cell phone," says fish. "Either way, it would be a lot easier if I could use a BlackBerry-type phone for work order entry, e-mail and voice mails." But for two years, the division manager has shot down every request for a BlackBerry – and now fish knows why. "My boss just reported back from the weekly managers meeting," fish says. "The division manager admitted he, in fact, *had* a BlackBerry, but didn't use it – because he didn't know how it worked."

Efficiency

Pilot fish is working on solving a problem at a user's desk when the user asks about something unrelated: Is it possible to change a weekly report so it prints out a customer's entire ID number, instead of just the first four digits? User says that would save her several hours of looking up hundreds of customer numbers every week. "After researching the problem, I came to the conclusion that the report is working correctly and it must be a problem with the printer on the user's desk," says fish. "Sure enough, I adjusted the margins on the printer, and the customer number was no longer being truncated off the right side of the page. I have no idea how long this printer had been set up this way, but it must have been a while. It was written into this user's job description that, after this report prints, she should look up the customer by name and write the last three digits of the ID number on the report."

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FRANK HAYES

The Hacker, the Con Man, The ATM — and You

This hacker was hapless. Will you be lucky enough to get one like him?

LAST MONTH, the FBI arrested a 19-year-old grocery store employee for trying to steal hundreds of thousands of dollars from ATMs. He planned to use default passwords he found online to reprogram the ATMs, convincing them they held $1 bills instead of $20 bills.

Moral of the story: *Change your default passwords.*

Wait — did that advice come a little too soon? After all, there's a lot more to the story of Thor Alexander Morris, according to the affidavit from the FBI agent who led the investigation.

It seems Morris got the idea from a YouTube video that showed how to hack a widely deployed ATM made by Tranax Technologies. And the manual for those machines was available online, laying out all the information for adjusting an ATM so it gives out more money than it should — including the default maintenance passwords.

An ATM programmed to give out $1 bills when it actually held twenties would respond to a request for $500 by counting out 500 $20 bills, or $10,000. At that rate, hitting just 30 ATMs would net $300,000. At least, that was Morris' plan.

Moral of the story: *No kidding, change those default passwords.*

So Morris flew to Texas, after making contact online with a Houston con man who said he could find dozens of Tranax ATMs. Morris bought a prepaid debit card, just as he'd seen online. He found an unsecured Wi-Fi signal and activated the card using the name "Barack Obama," then asked a friend of the con man to drive him to a flea market that had the right kind of ATM, where Morris put on a wig and fake beard and set to his task.

Unfortunately for Morris, the con man was feeding information to the FBI. The "friend" was an undercover agent. And the ATM was under surveillance. Oops.

Moral of the story: *Really, change those default passwords. And pray you get an attacker this hapless.*

Maybe you're thinking another moral should be: *Curse the Internet for making it easy for crooks to find things like default passwords.*

But the Internet made it much easier for the FBI, too. The law enforcement agency had clear photos of Morris, straight from his Facebook page. And his e-mails and instant messages to the con man let investigators know pretty much everything he planned to do.

Oh, yeah — and the con man let FBI agents use his online identity to contact Morris directly. On the Internet, nobody knows you're a fed.

(Besides, your help desk probably saves itself a lot of work by pulling manuals from the Internet instead of searching among shelves, boxes and piles of documentation. Of *course* manuals are on the Internet — along with tips, how-to's and dirty tricks. That's what the Internet is for.)

As it turned out, Morris' scheme was probably doomed from the start. That YouTube video was based on an ATM heist that took place in Virginia in 2006. After that, Tranax patched its software so installers had to change the default passwords before ATMs went into service. Morris never had a chance.

Make sure the would-be thief who goes after your systems doesn't do any better.

Moral of the story: *Honest, you should change your default passwords. And apply your vendors' security patches. And when in doubt, call the FBI.*

And never, ever get your security advice from YouTube. ◆

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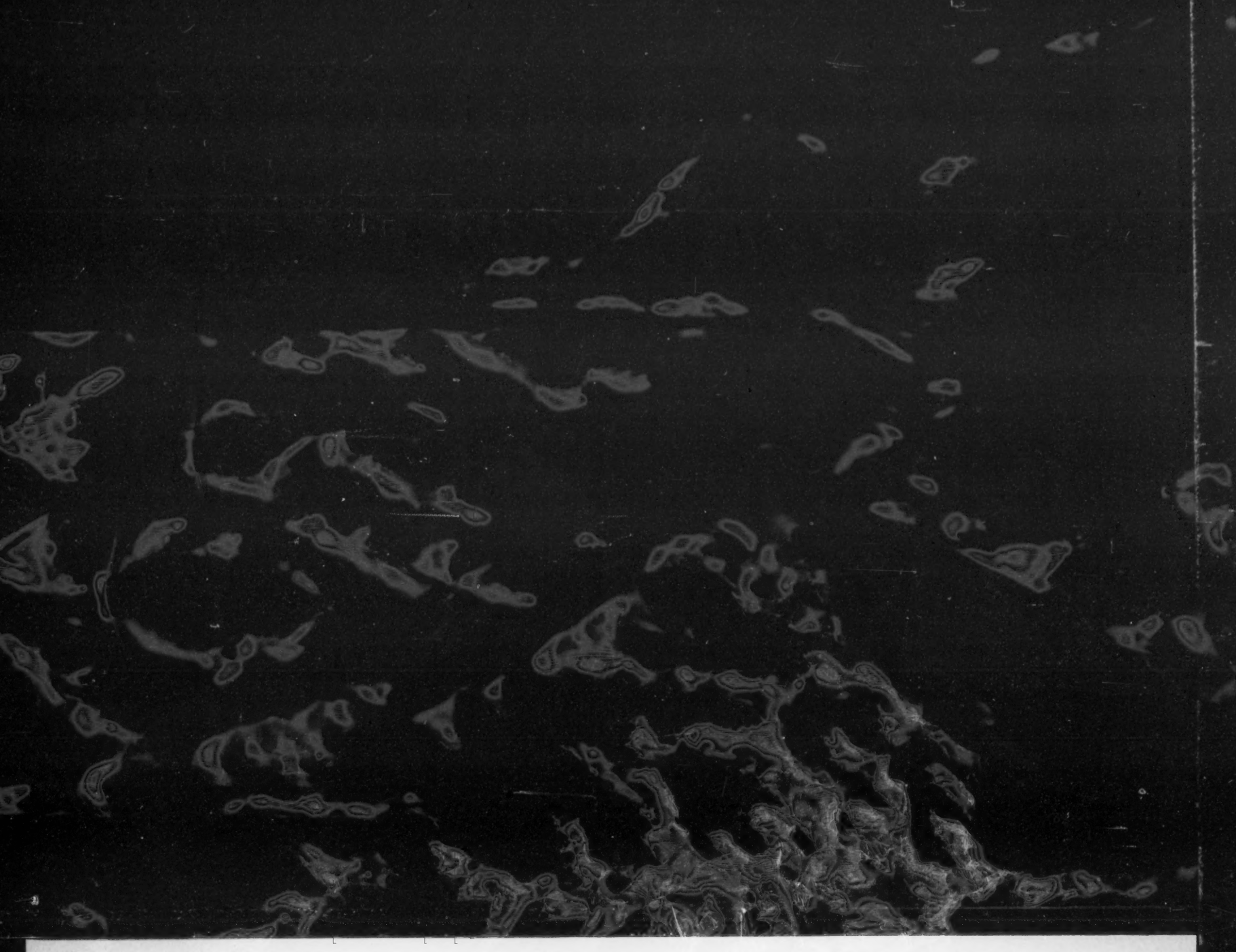
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